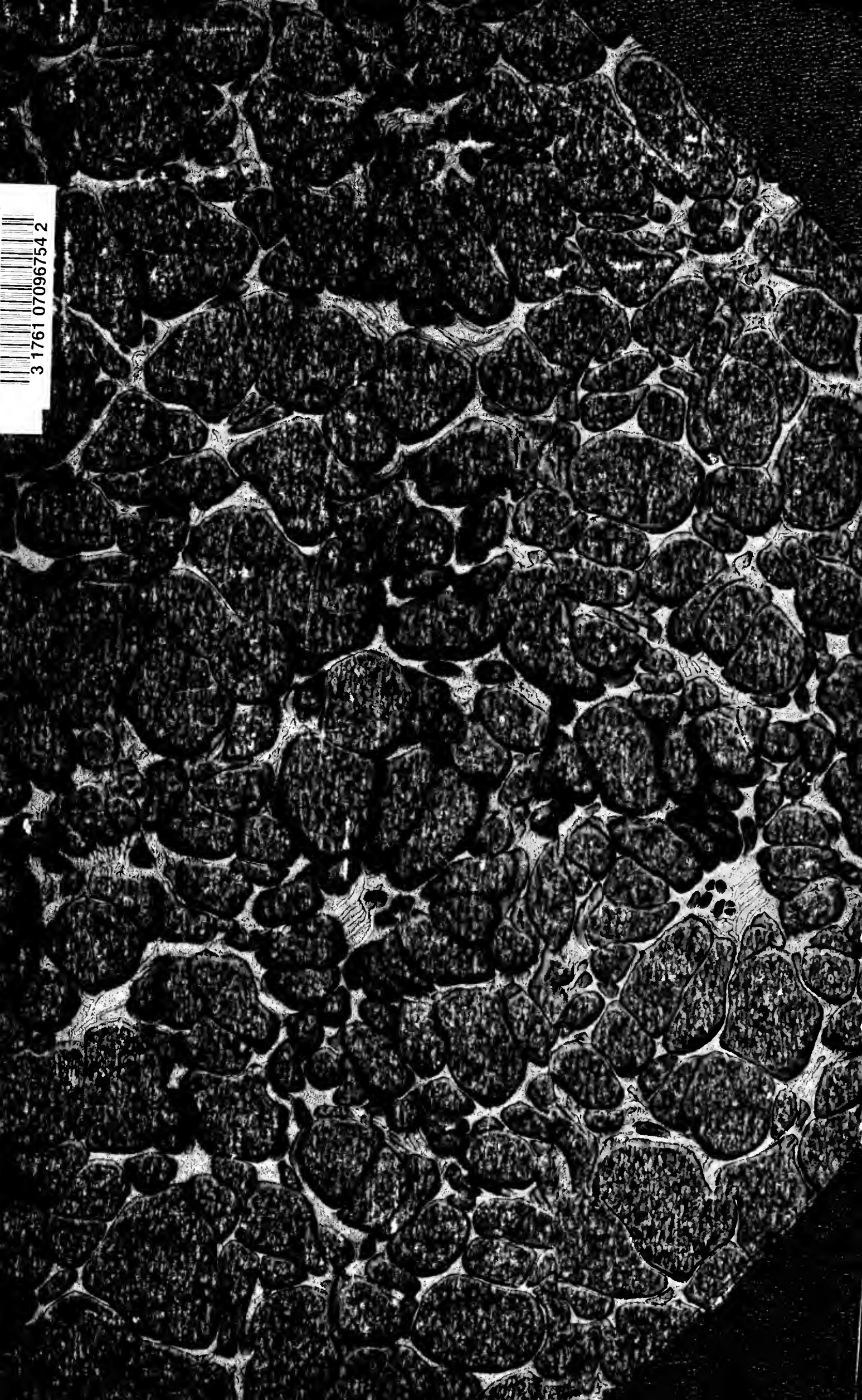


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LIEUT.-COMMANDER NORMAN D. HOLBROOK, V.C.

Who, by an act of brilliant daring, entered the Dardanelles and sank with a torpedo the Turkish battleship *Messudiyeh*, which, next to the *Goeben*, is the most powerful unit in the Turkish Navy. In order to reach this ship it was necessary to pass under and through the mine-fields, and the exploit loses none of its magnificence by the fact that the currents at the entrance to the Dardanelles are exceedingly treacherous. It is a matter of congratulation that, although hotly pursued and fired at, the intrepid Commander succeeded in returning safely to his base.

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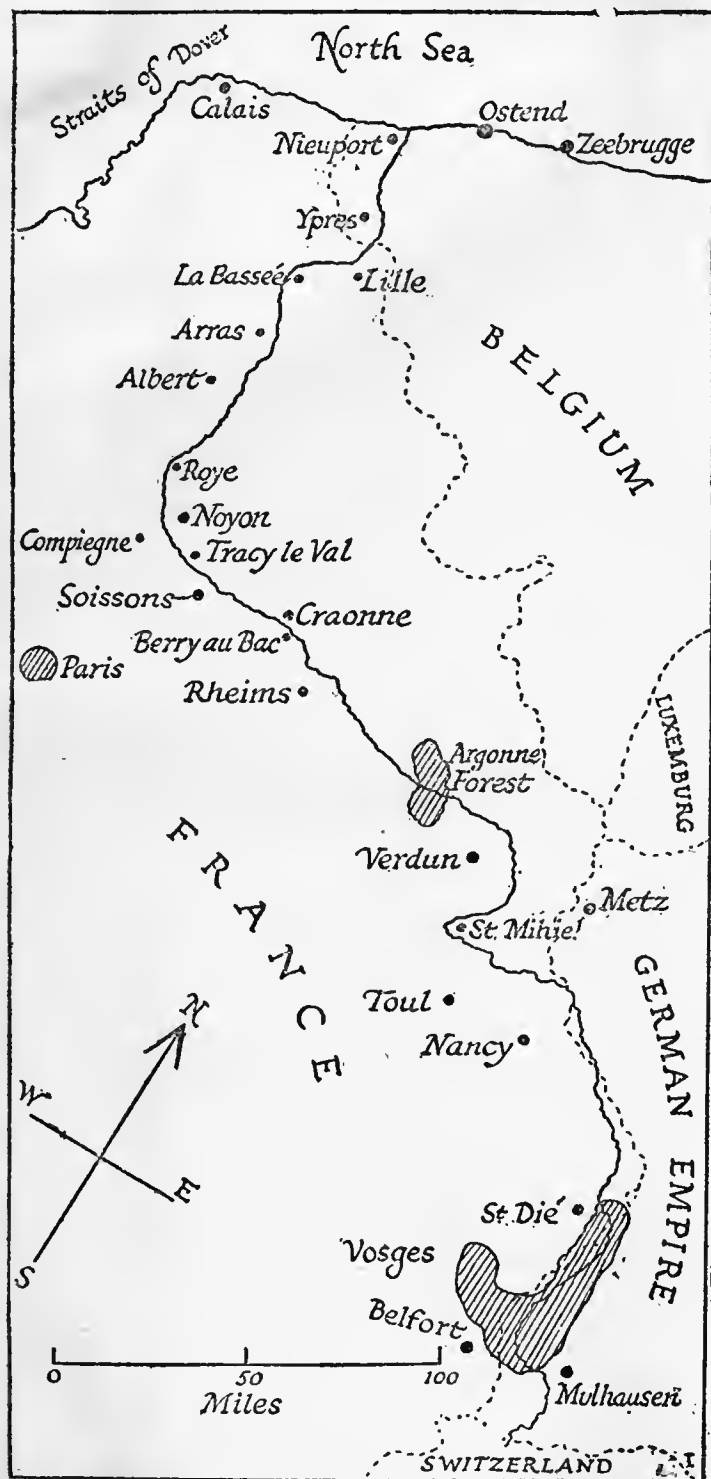
81 King William Street,
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THE WAR BY LAND.

By HILAIRE BELLOC.

NOTE.—This Article has been submitted to the Press Bureau, which does not object to the publication as censored and takes no responsibility for the correctness of the statements.

In accordance with the requirements of the Press Bureau, the positions of troops on Plans illustrating this Article must only be regarded as approximate, and no definite strength at any point is indicated.



THE DEADLOCK IN THE WEST.

FOR now three weeks—or nearly—a pronounced offensive by all the Allied forces in the west against the opposed German forces has proceeded. This offensive has gained here 50 yards, there 100, there 500: rarely a thousand. It is still, in the popular eye, “a deadlock”—but the phrase is misleading.

On account of the scale upon which this war is being conducted, and because it necessarily contains a great quantity of novel tactical features (due partly to the unprecedented numbers engaged, and in some degree, but less, to unprecedented weapons), there is a tendency to speak of

this so-called “deadlock” in the west as though it also were something unknown in the history of war, and therefore presenting no elements by which we could calculate its nature and probable duration.

This view is erroneous. We have many parallels in history by which to judge the situation and some elements for calculating its staying power. It is evident that these new elements profoundly modify any strict analogy with past experience, but the elements of the business are pretty clearly what they have been throughout military history.

The enemy is holding “lines”—that is, temporary field fortifications—and the Allies in the west are engaged in forcing those “lines.” That the enemy is sufficiently numerous to hold “lines” over three hundred miles long is due to the numbers engaged in this new kind of war, and such an enormous extension is a novel feature.

Another not wholly novel, but paradoxical feature is the fact that those now attacking are themselves moving from “lines” which, if the defenders are (as they can be) largely reinforced, will in *their* turn be subject to pressure and have to be held against a counter offensive.

But for the moment the Allies are on the offensive in the west, and their offensive is directed against the lines held by the Germans. The essentials of the problem are exactly what they have always been. A force holding “lines” can only be driven out of these in one of two ways; either the “lines” are pierced in some part so that the enemy gets round the flank of either of the two halves into which the “lines” are thus divided—enfilades it, takes it in the rear, and all the rest of it; or the enemy gets round one or the other, or both, of the ends of the “lines” and turns them in that way. To prevent the latter misfortune, a man drawing his “lines” reposes both ends of them upon obstacles which the enemy cannot turn, or can only turn so slowly and with such difficulty that he will be met and defeated if he tries to do so. For instance, Wellington drew up his “lines of Torres Vedras” between the sea and the broad waters of the Douro, and the French had no choice but to try and pierce them, which they failed to do. The French revolutionary generals conceived in the same way the “lines” of Weissebourg, reposing one end upon wooded hills and the other upon a broad river (these, if my memory serves me right, were pierced at one moment, but not turned).

The Germans in the present instance have their “lines” drawn from the frontier of Switzerland—the territory of which neutral country the Allies do not propose to violate—and the North Sea.

Now, if your “lines” are so drawn that they cannot be turned by the extremities, and your enemy has no choice but to pierce them somewhere,

then everything will depend upon your having enough men to hold the lines as against the number of men he can bring against you. And the problem here is not a mere question of proportion (as, that one man behind earth can hold up three men, or five men, attacking him), it is also a question of absolute numbers.

To put an extreme case: The Roman Wall across North Britain is an example of "lines." Suppose ten men tried to hold it against fifty, their effort would be manifestly ridiculous. Ten men could not hold it against ten, let alone against fifty, because ten men are not sufficient to watch any force at all that was free to operate against a front stretching from Carlisle to Newcastle. Ten men could not "hold" the Wall at all. Conversely, a million men with proper artillery could hold those "lines," not against three million or five million, but against any number of millions. Because the enemy, however numerous, could not deploy a sufficient number of men at any one spot to break down the solid defence which so very large a body as a million could, with proper communications, concentrate wherever an attack threatened.

The piercing of entrenched "lines," therefore, depends in the main upon this mathematical conception.

"When the defenders of a 'line' have become so rare that they cannot concentrate on any point whatever in a given time, men sufficient to stop such numbers as the enemy can (a) usefully deploy (b) concentrate on that point in the same given time—then the 'line' is pierced," and once pierced its whole structure disappears. It must either retire precipitately or suffer disaster. For instance, twenty men could not hold a mile of wall against 100 men trying to scale it by ladders. Somewhere in the rushes to and fro a party of the hundred would get up.

Suppose 1,000 men could just hold it against 5,000. That would be because 1,000 was enough to "man" the wall, i.e., enough to concentrate a group of ten or so in any point and push the ladder off. But 500 would leave gaps. Six hundred could not hold it at all, quite irrespective of whether the assailants were 5,000 or 3,000 or 2,000. And once a body of the assailants scaled a bit of the wall the whole organisation of its defence must collapse.

A warfare of "lines," therefore, is essentially one in which the attackers wear down in numbers and material resources the besieged; the besieged have not an indefinite power of resistance, but must, after a certain amount of wearing down, break.

That is why the whole thing is compared to the strain put upon a very hard, but at the same time brittle, substance such as a rod of glass, and that is why a reserve is kept back to strike at the right moment, as a hammer might strike just at the right moment upon a glass rod already strained by the hands.

Critics sometimes talk as though the existence of trenches behind trenches, that is of a series of "lines," parallel one with another behind the original "line," rendered the problem insoluble. "The enemy," they say, "may be driven out of his first 'line,' but he will fall back upon his second; from his second upon his third—and so forth. There is no end to it." But that is not the way the thing works, or

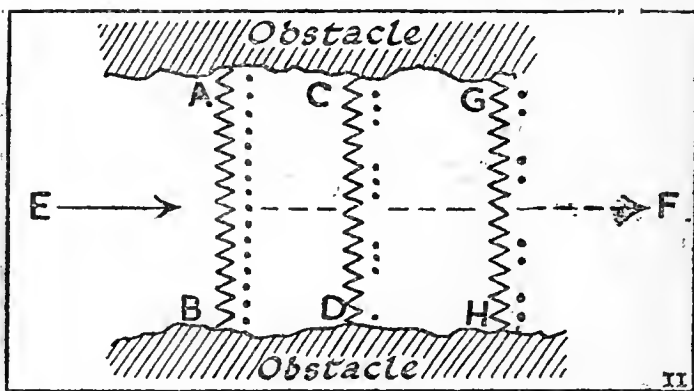
can conceivably work, unless the second lines are shorter than the first and the third lines shorter than the second. So long as a General has enough men to hold his first line against the enemy's numbers and mechanical means of attack, so long he will hold that first line. When he has no longer enough numbers to hold his first line he is manifestly equally unable to hold a second line of the same length. He can only usefully fall back on a second line on condition the second line is shorter than the first.

One could put the whole thing in a phrase by saying that an army is not "pushed" back from its lines, it is "threatened with the breaking" of its lines.

The effort which you make against an entrenched army is not like the effort which you make in shoving a door open against opposition; it is like the effort you might make in grinding at various parts of a long cord. If a man whose business it was to keep a cord stretched against you found your attrition making it grow so thin in places that it would not hold, he might move it rapidly back, sever the weak places and knot them up again; but he could only do this on condition that the new line to which he had retired, and which he proposed to hold with his cord, was shorter than the old one.

The point is exceedingly elementary and therefore calls for an apology, but it is so much misunderstood at the present moment, and, misunderstanding breeds at home such a lack of confidence in the future of this trench fighting in France and Belgium, that it is well worth insisting upon.

We have here an isthmus between two seas,



or a plain of open land between two mountain ranges, or belligerent territory between two neutral frontiers, or any other kind of issue requiring artificial defence between two natural obstacles.

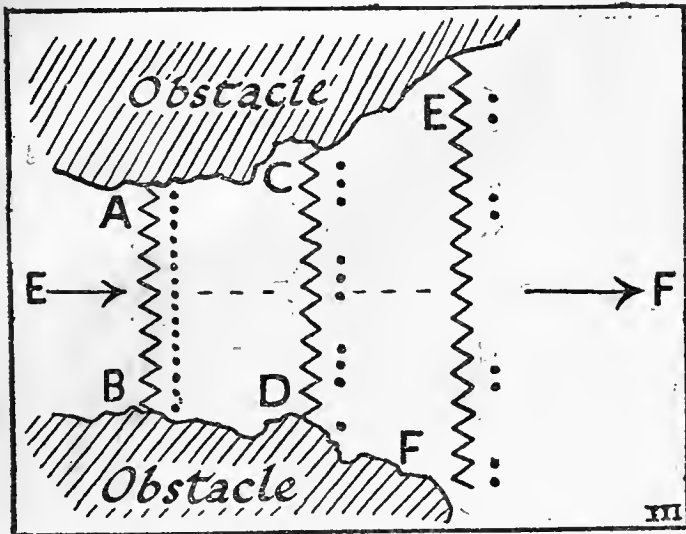
It is defended by a General of country F against the invasion of forces from country E.

To defend this issue and to prevent an enemy from E penetrating towards F in the direction of the arrow, the General draws up his entrenched lines, A-B, sufficient for the defence of which (but only just sufficient) are his sixteen units—which I have represented by sixteen dots—holding the lines. His wastage in men, or the corresponding increase of his enemies, whether in numbers or in mechanical opportunities for attack, reducing his sixteen to the value of ten his lines are lost. They cannot be held with only ten units remaining. Why? Because they are too long.

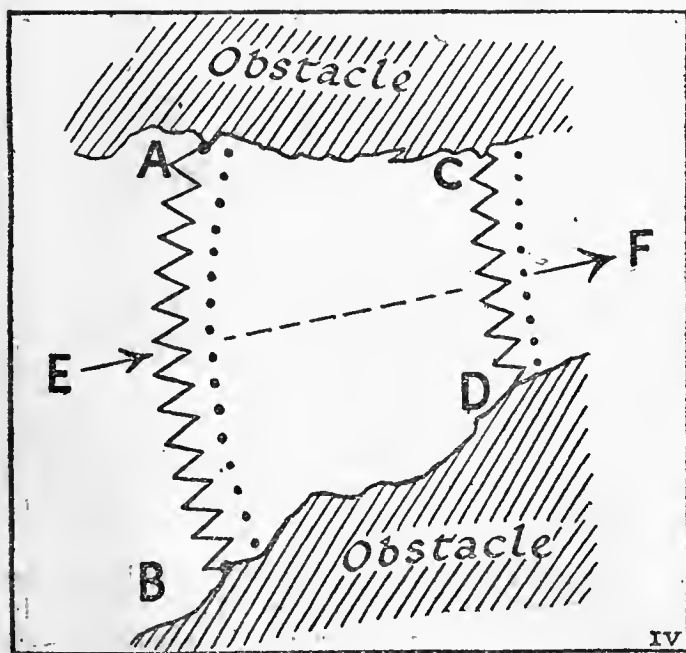
It is no good preparing behind those lines, A-B, another series of lines, C-D. The ten whom he has left will not be strong enough to hold C-D

any more than they were strong enough to hold A-B. Still less is it of any use for him to prepare further lines such as G-H, for G-H is as long as C-D or A-B was, and by the time he got to G-H further wastage may have reduced him to only eight units, and it would be quite impossible to think of holding the lines.

Still more obviously would this be the case if the country were so formed that the next lines which he could form behind and parallel, A-B, were, as in the accompanying diagram, each successively *longer* than the original line.



It is self-evident that the only case where a General who is compelled to give up his original entrenched lines can fall back to other parallel lines prepared behind them, is when those other lines are shorter than the original line. Thus, in the accompanying diagram, a General who, for



political or other reasons could just hold A-B with his original sixteen units, finding them reduced to ten might well fall back to new prepared lines, C-D.

He would say: "I have to give up all the intervening country between A-B and C-D (which for such-and-such a reason I should very much like to have held), but the all-important thing is to prevent the enemy getting to F, and though it is a disaster to have to give up the country intervening between A-B and C-D, yet it would be a much worse disaster to let the enemy get to F. Therefore, I will fall back on the new prepared line,

C-D, which is much shorter than my old line, A-B, and which I can hold with the ten units that are left to me."

Now the whole interest of the campaign in the West lies in the fact that the German Commanders are deprived by the physical and political geography of Western Europe and by the political task they have been set from thus falling back successively to shorter and shorter lines behind their original line.

This original A-B is for them the existing line between the North Sea and the Swiss Mountains. F is the soil of Germany proper, to keep the invader out of which is the grand political object of the German Commanders at this moment. If they give up their line A-B, upon what shorter line, C-D, and up to what further shorter line, E-F, can they fall back?

Note upon the map on page 4 the existing German lines in the West, and the conjectural lines behind on which they might retire, and note in what a political dilemma either such retirement would put the Commanders of the German Army! Their present A-B line which they hold is roughly three hundred and fifty miles in length in all its convolutions. I have marked it 1, 1, 1, 1. Suppose they fell back upon the C-D line passing in front of Antwerp and Brussels to Namur, then up the Meuse to the neighbourhood of Verdun, and so along their original line to the Swiss Mountains. I have marked it 2, 2, 2, 2. They would shorten their total present line by not much more than a seventh, and this slight advantage they would only gain by sacrificing all their present hold upon the strip of North-Eastern France, which is their principal political asset in the Western campaign as it is now developing. The distance from their present positions just north of Verdun to Antwerp, counting the necessary fluctuations in the line, would be nearly 200 miles. Their existing lines from the same point north of Verdun round past Reims and along the Aisne and then up to the North Sea by Nieuport, are barely 240, and to gain that 12 or 13 per cent. of relief from the strain upon their diminishing numbers, as compared with the increasing strength of their adversaries, they would have to give up all thought of further advance on Calais, all Western Belgium, and all the French territory they hold, except a tiny strip east of the Meuse Valley.

See what a sacrifice they would be making in the objects and nature of their war, and for how slight an end!

There is more than this. There is the loss of abandoned wounded, and of materials and of stores that would necessarily accompany such a retreat—and all this for a concentration of men hardly perceptible.

But there is a further line behind this again to which the enemy might retire, and by so retiring really seriously shorten his line and concentrate his effectives.

It is a line which many must have been struck by as they looked at the map, and it is one which, if this war were to be conducted by the Germans merely as a problem of strategy, they would obviously regard as their next line of defence.

It is the E-F line which, starting from the Dutch frontier, covers Liège, runs along the valley of the Ourthe, includes the Grand Duchy of Luxembourg, and further south reposes upon



Thionville and Metz, and then upon the Vosges exactly as the present line does. I have marked it 3, 3, 3.

Supposing the Allies to respect the neutrality of Holland, this line we can perceive at once to have quite obvious advantages. It is hardly two-thirds of the original line in length; it has three great fortresses upon its front, nearly half of its trajectory is taken up with the difficult and highly defensible country of the Ardennes in the north and the Vosges upon the south; and, lastly, it keeps German soil intact.

That line, the Liège-Metz line, we can quite safely say is at once the obvious and the *only* second shorter line upon which, with reduced effectives, a German retirement could safely be made.

But, unfortunately for Germany, German

problems are not as yet—nor perhaps will ever be—purely strategical in this war. They are grossly interfered with by political considerations. To fall back upon this obvious second line is to give up Belgium and Antwerp and all hope of threatening Great Britain. It is to confess the beginning of the end. It is morally certain that such a confession will not be made by such confused thinkers until it is too late.

This second line, the line, Liège-Metz-the Vosges, once abandoned, there is no other. The line of the Rhine, in spite of its great fortresses, is not one upon which a force seeking concentration could retire. One has but to look at the map to see that this is so. It is a line which, in all its convolutions, is almost as long as the present line, and before a German Army should retire to it, that

invasion of German soil which, *let us always remember, it is politically essential for the German rulers to prevent*, would have taken place.

No; the more one looks at the problem, the more convinced one is that the enemy will hold on to his present lines in the West as long as it is just compatible with his strength to do so, *and possibly a trifle longer*.

This would seem to be the whole value of that now persistent Allied pressure upon the immense stretch of trenches from Westende to the Swiss frontier: the certainty that the enemy will try to hold those trenches up to *and beyond* the safety point. It is the fervent hope of every Commander of the Allied forces who is watching the struggle that political considerations, which are already hampering German strategy, will pin the enemy just too long to his present line; and that is why that line must be kept occupied, sawn yard by yard, frayed and frittered away by the persistent effort which has been patiently watched in the Western campaign throughout now nearly three months.

But here the reader may well ask by what right the French and British Commanders are attacking and thus discounting an increasing strength upon their side and a correspondingly increasing weakness upon the enemy's side along the line which he now just barely holds?

Is it not true that the Germanic Powers between them can put in arms more than *three* times as many men of military age as can the French? Is it not true that the British contingent at this moment adds not one-tenth to the French line? And is it not true that, even when the present full number of British volunteers are trained, equipped, officered, gunned and sent out, they will have added but 30 per cent. to that line?

All this is true; but it is nevertheless also true that, so long as the war remains active in Poland, the Western Allies may confidently expect that gradual diminution, both in the mechanical weight of armament, and in the proportionate numbers, of the enemy, which will compel either his disaster upon the existing lines, or his retirement to a much shorter one.

This they can predict from the following three converging factors in the case: —

(1) Superiority in equipment passes with time from the German to the Allied side.

(2) Wastage is very much more rapid upon the German than upon the Allied side.

(3) The Occupation of the Enemy upon his other, or Eastern, front, must, as things have turned out since the second battle for Warsaw was engaged, increase for some time to come.

I will take these three factors in their order.

I. *Equipment*.—The war prepared by Germany and forced at her own moment by Germany, found Germany more ready than her enemies in the West on several points. She was not more ready in military science and temper; her strategic theory has been proved, indeed, inferior to that of the French, and she has made no successful assault, save with vastly superior numbers, but many an unsuccessful one with them. But she had a much larger stock of weapons and ammunition for the successive equipment of reserves, and her doctrine of heavy artillery, which has proved sound enough, had provided her at the outset of

hostilities with an immense numerical superiority in this arm.

But the provision of equipment is, for the Allies, only a question of time. The blockade of Germany, though but partial, is already felt in certain essentials in equipment; and in the particular case of heavy guns, once the plant is ready, it can be calculated to a few days what space of time will give the English and the French shops a numerical superiority of output. The rapidity with which large ammunition can be turned out in the West is again much greater than in the Germanies. England, in particular, has a much larger population free from the necessity of appearing in the field, and both France and England receive in larger quantities than they can use the materials for the manufacture of all that is necessary to modern war. Already some slight superiority in the heavy artillery work is apparent throughout the Western lines upon the side of the Allies, and every day that passes increases this.

II. *Wastage*.—In the point of wastage, we have further statistics which were not available when earlier estimates were made in these pages. It is true that the French have not yet given us the number of German prisoners whom they hold, but the Russian figures have been communicated, and the French Ministry has openly published the number of French wounded, from which we may fairly estimate the general statistics of casualties. I hope to go into these figures more precisely in a later article. I deal with them here only in round numbers.

(a) PRISONERS.—The first thing we note in these figures is that the Russians *before* the recent action in Poland, counted over 130,000 German (exclusive of much more numerous Austrian) prisoners. It is safe to say that the total number of wastage from this source, East and West, is not short of a quarter of a million at the present moment. One German estimate (unofficial it is true) gives the German "missing" at 400,000. But these may include many unaccounted dead. Also a quarter of a million is quite likely too low an estimate for the total number of German prisoners. But at least a-quarter of a million there are.

That figure—a-quarter of a million—by itself means little in the problem of the enemy's *comparative* wastage. Of French and Russian prisoners combined the Germans could produce an even larger number; a number perhaps a third as large again or more: but let us interpret its full meaning.

Let two very important things be remembered: First, that the great bulk of French and Russian prisoners taken by the Germans were taken in the earlier phases of the war more than three months ago. The rate of wastage from this source is now greater on the German than on the Allied side.

Next, let it be noted that all the German prisoners in French and Russian hands are true effective *soldiers*.

The Germans count in their statistics those masses of civilian population which they have seized under their peculiar system of war and carried away into captivity. There are villages in French Lorraine where none of the old men are left, and of the males no one but the children under sixteen.

The policy has, like every other German policy in this war, lacked thoroughness and homogeneity. It has—just like the massacres, and just like the looting—been carried to an extreme in one place, left almost unpractised in another. But we have enough evidence before us to know that the proportion of prisoners of war in Germany which consists of civilian inefficients, or of men below or above the military age, or of men of military age employed upon necessary civilian occupations (such as mining or railway running) is very large. In the town of Amiens alone, for instance, which was in the possession of the Germans for only a few days, 2,000 able-bodied men of military age were taken, largely from the railway services; and a French doctor recently returned from a prisoners' camp in the North of Germany has testified to the numbers of old men present there: driven into captivity mainly from the eastern fringe of France.

(b) KILLED AND WOUNDED.—But if wastage from prisoners is now increasingly against the Germans, and is already large, wastage from casualties of killed and wounded is far more striking. We can infer positively from the known proportion of killed to wounded that the Germans have lost three men to the French one.

The published Prussian lists of casualties as reported through Copenhagen make the proportion much larger, something like four or five Germans killed to one French. But we have no need to consider the more favourable estimates; at three to one the ratio is quite sufficient to show that the present lines in the West cannot indefinitely be held.

The reason of this abnormal contrast between German and French casualties is clear enough. It consists in several points.

(α) That the Germans had to win at once if they were to win at all, and were therefore lavish of men. (β) In the great superiority of French Field Artillery—and of the excellent Russian gun when it can be properly supplied. (γ) In the superior numbers with which the campaign in the West was undertaken by the Germans. (δ) In the formation the Germans choose for fighting. (ϵ) In the fact that most of their casualties have occurred in that most expensive of all efforts, a prolonged and unsuccessful offensive. Of such a nature was all the fighting on the Yser and later round Ypres, and of such a nature has been the whole of the second battle for Warsaw. (ζ) In the small reserve with which the Germans work. (η) In that the Germans unlike the French embroiled older men with younger. (θ) In that the Germans unlike the French permit a large number of volunteers under age to join the colours, and so eat their wheat green. Etc., etc.

One detail I think will sufficiently illuminate this contention of the very much more rapid wastage of the Germans from casualties. Taking the number of wounded of all kinds at eight times the number of dead,* and applying that test to the

published official figures of French wounded of all kinds, we get for the total number of French killed in the war more than double *but not three times* the numbers of Prussian *officers* alone reported killed to date; excluding the list of officers killed in the Bavarian, Wurtemberg, and Saxon Armies—of the former we are told that 25,000 have fallen. The French with just under 500,000 officially reported wounded *may* have lost 50,000 dead—even possibly 60,000—but more probably much fewer.

Remember that it is not here a question of total actual numbers but of proportion. We are contrasting the rate of wastage rather than its amount. It is true that more than half the men wounded return to the front in either army, but the rate of wastage in killed and wounded which the German force was suffering when the trench-work began, and which it is still suffering, counting east and west together, is *at least three times that of its western opponents*.

III. The Occupation of Germany in the East.

The occupation of German effort in the eastern field is the third factor which makes the reduction of forces in the western trenches to breaking point ultimately inevitable. What that occupation is we shall follow in detail when we come in a few lines to the present phase of the two battles for Cracow and for Warsaw; but in considering this necessary weakening of the German lines in the western trench-work we are concerned not with the details but with the general character of the eastern struggle.

This Polish war is now for the Germans essentially a series of attempts to reach certain objectives—notably Warsaw—which attempts necessitate the concentration of every man they can spare from the west; such attempts are necessarily coupled with very high loss in case of failure to reach the objective—and that objective has, after weeks of effort, not been reached. To beat back Russia and to stiffen Austria Germany must put very large forces into Poland; she cannot withdraw them until she has made the threat upon Silesia fail by the capture of Warsaw; and Warsaw she approaches and does not take.

If she sends back forces from the east before Russia is really hard hit, then Russia readvances and Silesia is again in peril: for it is not possible to hold merely defensively the whole line from the Baltic to the Carpathians.

THE ACTION NEAR LA BASSÉE (IN FRONT OF FESTUBERT, RICHEBOURG, NEUVE CHAPELLE, AND GIVENCHY).

The sharp affair in the neighbourhood of La Bassée, somewhat to the north and west of that town, which is the only event of moment in the West this week, is a very good example of the way in which contradictory accounts come in, and of how, almost inevitably, each side in a war accuses the other of falsehood. It is also an example of the way in which the enemy's accounts may, as they are intended, create an impression worse than the truth. Let us begin by the German Wireless of last Saturday, December 26th. It tells us that the affair between the Germans and the British forces (including certain Indian contingents) resulted in the capture of 819 men, 19 officers and loss in dead alone to the Allies of 3,000. But

* Frequent reference has been made in these columns to the multiple 8 as being "conservative," or too low, as a multiple to connect *dead* and *wounded*; i.e., there are more (we say) than 7 wounded, normally, to 1 killed in action. Correspondents who have doubted this from a consideration of exceptional cases may, if they will, consider this one proof out of many. The total casualties of the British contingent to a given date in November were 82,000; of these *nothing like* 8,000 represented the killed—the ratio was not even 1 in 11, let alone 1 in 8.

it gives no detail of day and place save to call it in general "The action near Festubert."

Now suppose one read that message alone, it could convey but one impression, and that not at all a pleasant one for our side. But when you read the evidence in its entirety you get something very different.

You have first of all the French message of exactly six days before, Sunday the 20th, which tells us that the line near La Bassée was straightened out after the capture of the Chateau of Vermelles by the capture of the German trenches at Givenchy, and that message added that to the north of this position the Indians had gained a certain amount of ground and the British forces had lost a certain amount of ground.

Coming on the Sunday and despatched on the Saturday, December 19th, these laconic French phrases referred to the situation upon Saturday the 19th. Upon Tuesday, December 22nd, the Germans, referring to actions already past, tell us that the English had tried to retain the ground they had lost, but had been repelled. The Germans, however, admit that round Richebourg (where the Indian troops were) the Allies recovered their ground and held it—which is simply a belated admission of the accuracy of the earlier French version.

Lastly there comes the British "Eyewitness" who, two days later, again gives us the official story as a whole and makes it comprehensible; and now we know what happened.

It was on the night between Friday and Saturday, the 18th and the 19th, that the British forces rushed the German trenches, presumably near Neuve Chapelle, advancing from 300 to 500 yards. In that success a certain number of Germans must have been killed, many more wounded and a certain number captured. How many we are not told. On the Saturday morning the Germans counter-attacked and recaptured part, but not all, of the ground first taken by the British. During all that Saturday and all Sunday this belt of ground was the scene of a fluctuating struggle in each receding wave of which, of course, the enemy pick up a number of our wounded and take them prisoner, and note that we have a number of dead, as indeed they have on their side a number of dead. The Germans were successful in retaking nearly the whole of the ground lost by them, and upon the Sunday, though suffering heavy losses as they advanced, they continued until about noon to secure their position. During all this, of course, they were picking up more wounded men and making them prisoners, and estimating the increasing number of dead. In the afternoon of Sunday the tide turned again. The furthest group of houses occupied by the enemy was retaken, and by Monday morning the greater part of the ground first captured, then lost, had been recaptured again. An armistice, in the course of the fighting, allowed for the burying of the dead.

This fluctuating of the line, ending in very much the original position occupied, cost both sides a heavy price. It meant, of course, for both sides many casualties. Regarded as an attempt of the Allies to advance it was a reverse; regarded as a German attempt to cover La Bassée it was a success for the German. For all these villages, Festubert, Richebourg, Neuve Chapelle, Givenchy, lie east and north of La Bassée, and when all are

captured by the Allies La Bassée will be untenable. Regarded as an attempt of the Germans to push back the steadily advancing line which now seriously threatens La Bassée, particularly from the south, it was a failure. And in general the line stands very much as it stood before the stroke and counter-stroke were given. But no one would derive so inconclusive a result from the German Wireless.

ON THE WORD "SIEGE."

I would like to add a note at the end of these comments on the western field of war with regard to the metaphor "siege" applied to the present situation of the Austro-German forces within the Armies of the Allies.

It is the penalty of using very exact terminology that the conversational connotations of one's terms make those terms seem paradoxical. For instance, if you say of an aristocratic state that is not a democracy and proceed to praise that state for its aristocratic qualities, people will call you paradoxical because they have some vague idea that a democracy is something humble but vaguely nice, and that an aristocracy is something haughty but vaguely bad.

I see by one or two criticisms in the Press that Colonel Maude's admirable phrase to describe the present situation of the war, "The Siege of the Germanies"—a phrase which I was quick to borrow with due acknowledgments because it seemed to me an excellently descriptive metaphor—has suffered from this penalty of exactitude. I will therefore recapitulate here the points which attach to that phrase.

(1) The essence of a siege is the restriction of the besieged manœuvre to a particular area. The more you compel your enemy to a particular area from which he has to try and fight a way out through your restricting lines the more are the conditions these of a siege.

(2) The word "siege" does not necessarily connote famine. It does not necessarily connote complete containment. *Least of all does it connote ultimate surrender and failure upon the part of the besieged.*

When we talk of this particular case as "a siege of the Germanies" we are using a metaphor subject to all the limitations of metaphor; for the word siege historically applies to limited areas, and we are here applying it to a very large one.

With regard to this particular siege it is evidently true:—

(1) That the blockade (which is something separate from a siege, though usually accompanying it) is imperfect.

(2) That the besieged area can provide itself with food, though not with all the other essentials of modern war.

(3) That the circumvallation is not complete.

(4) That quite obviously the besieged may be able to cut their way out; because the besiegers are still numerically inferior to them.

None the less their present condition, in which they are battering against an imperfect ring of hostile Armies (and Navies) which they fail to break, is essentially a state of siege.

proper, including the Poles, count but 14 million adult males of military age; while *Russia* proper, excluding Poles, has available (according to the same statistics) only about 12-13 million of adult males of military age. There are, of course, very large sections of the population other than Slavs upon which Russia draws impartially for her conscripts, but I give these figures to explain in some part the discrepancy between the apparent and the real resources of the Russian State in war.

Next, apart from this heterogeneous character, it must be clearly appreciated that economic necessity forbade Russia to train more than a certain number of men, or to provide equipment for them or officers for them. The number so trained was very large, but less by far in proportion to her total population than was the case in any other of the great conscript countries. It may be urged, indeed, that this left a vast quantity of untrained material by way of reserve, and that is true; but you cannot make an army from such sources alone. An army also needs guns and the whole framework of regimental officers and staffs, and that preponderating factor of *equipment* which cannot be improvised.

It is true that after an indefinite delay this great absolute superiority of numbers would begin to tell, but it would not begin to tell in the first year of a war, and hardly in the first two years. It would tell very heavily in a struggle prolonged as were, for instance, the Revolutionary and Napoleonic wars.

We must not, then, think of Russia for one moment as we think of France or of Germany: a single homogeneous nation occupying a comparatively restricted and highly developed area, organised under one comparatively simple military system which works exactly with the civil administration. We must think of Russia for what she is, an Empire. She is an Empire, the development of which is still on the way to modern organisation. In this process, it is true, she has advanced with astonishing rapidity, but it is still far from completion. It is an Empire in which the economic resources of all kinds, including communications and equipment, the instruction of officers, and the rest, cannot be, as it is in the older countries, coincident with the maximum man-power of the State.

No one can exactly fix the limits of the numbers which Russia could put into the European field in an indefinite space of time. But we can make some rough estimate of her *potential* (not her actual) adult male population thus available within, say, the space of one year, supposing she could obtain all the equipment she needed and had the communications wherewith to feed and to supply all present upon the field.

Russia calls up for training every year rather more (but not many more) young men than does Germany. She calls up anything between a sixth more and a fifth more—that is, for regular training; you must allow a good deal of margin for irregulars.

When we consider that Germany by her system can lay her hand on just under 4½ million men of military age who have had some sort of training, we may safely put the similar number in Russia at over five million. But you cannot put it at much over five million, because the increase of the Russian population is so rapid,

and the re-organisation of the Russian forces has been so recent, that the later contingents are much larger than the early ones. In other words, the proportion of *older* trained men is smaller than in other armies. That this has its advantages as well as its disadvantages we shall see later. Let us for the moment fix in our minds that number, *five* million.

Now how much are we to add to that five million to give what I have called "the potential"?

Here one is necessarily vague, just because there is this very large mass of untrained reserve (of very varying quality and even of varying races), and also because the number that you can find for your potential is limited by the moral possibility of officering them and training them. I suggest as a maximum one man in such a potential reserve for each man who has had some training. That maximum will, of course, never be reached in anything save quite unexpected length of war, stretching over many, many years. But let us take it as a maximum upon which to work the rest of our calculation. Then if Russia has five million trained men, we may call her "potential" 10. It is certainly not more.

We can now set down in tabular form the following list of "potentials" in millions:—

<i>Allies.</i>		<i>Enemy.</i>	
Great Britain	3	Germany	... 12
France	... 7	Austria	... 9
Russia	... 10		
Total		Total	
... 20		... 21	

III.—ACTUALITIES.

These *potential* figures do not, of course, represent *actualities*. They are maxima, and maxima altogether superior to what will really be raised—save, perhaps, in one case—in the full year. Let us proceed, then, as the last stage in this analysis, to consider the *actualities* to which these "potential" numbers shrink in their turn.

GREAT BRITAIN.

The three million maximum potential which we have set down for England is modified only by two considerations. The first is whether recruitment upon the present system will give this number—which can certainly in theory be attained; the second is whether the existing army on the Continent into which the new levies must be "digested" will be large enough, when the time comes, to achieve that process of absorption.

You do not pour new levies into a field unsupported. It would be fatal. You mix them with and embigade them with, make them fight side by side with, men who have already formed themselves to war in action.

If we allow so long a space as a year for the process, and if we consider both the quality of the material and the intensive training to which it has been submitted, we may, I think (short of unexpected disasters), be easy as to this second consideration.

As to the first consideration, that is, whether our present system of recruitment will provide the full number or no, only the future will show. More than half, but not two-thirds, of the task is already accomplished. We have about another million to find. To accomplish this by a compulsory system is a highly controversial proposal, not suit-

able for discussion in these columns. But it is worth pointing out that this country is the one and only belligerent country in Europe which can still manufacture freely, that its industry is largely supplying the Alliance, and that a voluntary system fits in an exact and elastic manner the demand for labour. Under the alternative system of compulsion you would have to arrange arbitrarily and mechanically what men were to be drawn for service, and what were to be left behind for industry—let alone for shipbuilding and for communications, for mining and for agriculture, and for commerce and for seamanship, mercantile and naval; and you would probably get worse material, too.

At any rate, it is the peculiar condition of the English co-efficient, which we have set at 3, that it is a potential quite able to become an *actuality*. We have no *necessary* reason to scale it down.

There is another point about the British contingent attached to this last point, which is that all the men it concerns are so far (or for much the greater part) first-class material. We have no deductions to make for age, inefficiency, or civilian employment, for the volunteers are recruited, by definition, only between the ages where men are best suited for the field, and only from men who have passed the doctor.

Let us set down our English maximum "actual figure," then, at 3.

FRANCE.

The French potential co-efficient of 7 is in a very different situation. It is a situation necessarily imposed upon every conscript nation, to wit, that you must deduct from its "potential" maximum all those who are not efficient for military service, and all those who must be kept back for the absolutely necessary civilian employment connected with communications and supply. In point of fact, this French co-efficient of 7 shrinks under such a test to something a little less than 4. The inefficient even among the young men in any nation are more than a fifth, and it is with difficulty they can be kept much below a quarter. To those inexperienced in the figures of a recruiting system, such a proportion will seem extremely high, but it is the unavoidable conclusion of practice. It must be remembered that the word "inefficient" does not mean broken down in health, or superficially and obviously weak, or diseased, or malformed. The inefficients are these, and very much more than these. They are the young recruits who, for a quantity of other less apparent reasons, for such trifles as varicose veins, or a weak heart, or twenty other things which would be insignificant in civilian life, are not apt for service. If this is true of the first and youngest batches of recruits, it is, of course, more and more true of the Reserves as their age increases, and when we get towards the last batches of the so-called "military age," to the men approaching forty and past forty, the proportion who would be only a weakness to an army if called up from their ordinary civilian occupations becomes very large indeed. To these we add the men who must, as a matter of prime necessity, be kept back for the furnishing of communications and supply of every kind, and, as I have said, we scale down our 7 to 4. And, indeed, 4 is an outside limit.....4

GERMANY.

Exactly the same thing applies to a conscript country such as Germany. I shall deal particularly with Germany in a moment, because round the possible German reserves of strength a great discussion is raging at this moment. But we are quite safe in saying that if Germany had trained every one of her adult males, her proportion would be at least what the French is, and for her 12 million we must write down 7. The number has been given in these very columns as high as $7\frac{1}{2}$ by making every allowance in favour of the enemy and deliberately over-estimating his strength. But in practice, and as an actuality, it is as certain as anything can be that the German 12 becomes 7, just as the French 7 became 4. We write down, then, for Germany the *actual* figure 77

AUSTRIA.

Upon exactly the same calculation we may decide, without fear of putting too small a number, to write down Austria at $5\frac{1}{2}$ instead of 9.

RUSSIA.

With Russia we approach the only indeterminate factor in this calculation of *actualities*. We know that Russia after five months of war has not in the Polish field anything like her total number of men who have received training, let alone any additions from her untrained reserve. To some extent this is due to slowness of equipment, from the fact that the supply for these very large numbers was not stored in time of peace, and can only (precisely as in our own case, and to some extent, that of the French) be provided after anxious delay in time of war.

It must always be remembered in this connection that a nation desiring to make aggressive war upon its neighbours, and planning to force war at a particular time, will always have an immense advantage in equipment and supply. If you do not want to make war: if, still more, you had never planned war for a particular moment of your own choosing, it would be folly to lock up, or rather to waste, economic energy in vast useless stores, most of which deteriorate or are superseded in a few years. As a fact, no civilised nation has dreamt of doing such a thing except Germany. Germany did not begin to do it till about three years ago, and Germany was only able to do so because she intended to make war at one chosen and particular moment to which this vast accumulation of equipment corresponded.* The argument is an obvious one, but it wants insisting upon because foolish people usually talk of the alternate policy as "unpreparedness." It is nothing of the kind. It is simply normal living. If indeed the other nations had known that Germany would really push calculations so far as to force a universal war at her own moment, then they might have provided against that moment; but no one did this because everyone—except Germany—knew that to force war simply at your moment and without grave reason save the desire for aggression means, in the European comity of nations, ultimate crippling and decay, and therefore no one thought that Germany would be so foolish.

At any rate the matter stands thus: that even of possible trained men from the Russian dominions

* It is significant that even Austria, her close ally, has found herself short of equipment and has had to borrow it from Germany, a million rifles among other things.

the number present equipped and fighting in the European field is far less than the total, and that this is in part due to delay in equipment.

But there was very much more than this. In the first place the Russian forces are divided into three quite distinct bodies—the Asiatic, the Caucasian, and the European armies. In the Polish field, as against Austro-Germany we are only concerned with the last of these three.

In the second place the Russians, most wisely, do not use their last Territorial Reserves of trained men.

In the Russian European Service much the greater part of the conscripts serve, I believe, for three years. They then pass into the "Zapas," or classes to be called up for active service in case of war, and this "Zapas" only covers men up to the age of about 37. The greater part of trained men are not called up for this war after that age. Russia has, of course, upon the model of Germany, her "Opolchénié," like the German Landsturm, which stands for the older trained men and for all the efficient among the untrained. She will certainly begin to train the untrained younger men first, seeing what vast stores of men she has. What number shall be set down for these untrained reserves as available—considering the equipment to be produced in the time—during the first year of active operations on a large scale, up to, say, the beginning of September, 1915? That is the "actuality" as opposed to the "potential" in the case of Russia, and we may suggest a maximum of $3\frac{1}{2}$ millions. We may presume $3\frac{1}{2}$ million of trained men out of the five million to appear, first and last, in the European field alone: for Russia will leave out the oldest categories, and has to provide for the Caucasus as well. We may add one untrained man to be called up and trained and officered and, in such a delay, equipped, for one trained man available at the outset of hostilities. So we may turn this $3\frac{1}{2}$ of trained men present in the Polish field to 7. Not necessarily less—but most certainly not more.

It is a high maximum I know, and very possibly it will not be reached, perhaps not even nearly reached, in the first year. Still it is a possible maximum of *actuality*; and we may now set down our table of these actualities, finally, as follows, for the first full year of active operations on a large scale, that is, up to the beginning of next September:—

ALLIES.			ENEMY.		
Britain ...	...	3	Germany ...	...	7
France ...	...	4	Austria ...	...	$5\frac{1}{2}$
Russia ...	...	7			
Total ...	...	<u>14</u>	Total ...	...	<u>$12\frac{1}{2}$</u>

and these should be our final figures.

But before leaving these figures, let us remember one very important point which tells, happily, in favour of the Allies.

After a certain limit of age, which cannot be exactly fixed, but which is certainly not long after 35 for the mass of men and at the very latest not after 37, the military value of a man not in long and continual military training becomes very low. The French recognise this by using their "Territorial" Reserve (a phrase which means in France the older men) for duties different from those incumbent upon the active army properly so called. They garrison, they watch communications, they are separated in the mind of the commander (and

in his dispositions) from the younger or "active" levies.

Now of the five great nations at war, the two which form our enemies—the Germanic body—are here heavily handicapped.

When we call Germany "7" and Austria " $5\frac{1}{2}$ " we are including great numbers of men between 37 and 45, but where the Allies are concerned, it is only the French co-efficient of 4 that suffers this handicap. *The British are necessarily exempt from this weakness because they are picking their men, and the Russians can be exempt from it also because of the very great numbers from whom they can also choose.* And the real weight of the Allies by the time Russia and England have put into the field every man they can put in, usefully equipped, will be greater than their apparent numerical establishment, because upon the whole Britain and Russia will be using younger armies. Numerically the Allies should be at their actual maximum as 14 to $12\frac{1}{2}$ against the enemy; in fighting power they will be much more like 16 to 12.

THE GERMAN MARGIN.

Now all this elaborate calculation is based, of course, upon an ideal state of things in which the losses of all parties would be exactly proportioned to their original strength. But we know that as a matter of fact the losses have been much heavier upon the side of the enemy so far than upon our own. They have been a great deal heavier in killed and wounded; they appear to have been even heavier in prisoners.

There is an unofficial but sober and highly credible estimate, proceeding from Switzerland and published by a newspaper which has been singularly sober and careful and reliable throughout this war (the *Paris Temps*), which sets the prisoners in the hands of the enemy at about $5\frac{1}{2}$ hundred thousand, and the German and Austrian prisoners in the hands of the Allies at over 600,000.

But the first of these figures certainly includes a great number of civilians, the latter hardly any. The Germans assure us that they do not count the vast numbers of civilians whom they have driven into captivity in their lists of prisoners. But they are not to be believed. German official information, as has been repeatedly pointed out in these columns, is sharply divided into two categories. Much the greater part of it is scrupulously, I had almost written pedantically, exact. But the small amount which is inexact can invariably be proved to be outrageous nonsense, and all the worse nonsense because it is often based upon a verbal quibble.* Thus, when the Germans tell us that they do not count civilian prisoners, they may be preparing to explain later they do not call any man between 17 and 70 a civilian. But, at any rate, to say that they are not counting what we should call civilians as prisoners is nonsense. We have had only this week an example of the same kind of nonsense. The Russians published the figures of 134,000 German prisoners in their hands. Upon this the German official communiqué protested that these figures were swollen with civilian prisoners; and the protest may have been justifiable enough, for the Russians

* Scarborough is an "armed port of war"—and later this means that it had Territorial soldiers in the neighbourhood. A "decisive victory" is won in Poland after the Falkland Island battle—and later this is discovered to be a Russian retirement of 10 miles—not in action. Peterkow is "stormed"—that is, occupied after the Russian retirement. &c., &c.

have been able to intern a certain number of German civilians who remained in Russia. But when the official German communiqué goes on to say that "The total number of German prisoners is not 13 per cent. of the Russian claim" it is playing the fool. That would mean that the total number of German prisoners in Russian hands was only 17,000!

But (1) the Germans lost heavily in wounded and retreated precipitately before the first Russian invasion of East Prussia. (2) When, after their triumph at Tannenberg the Germans invaded in their turn, they were beaten back from the Niemen with heavy loss and left heaps of wounded, particularly upon the causeway of Suwalki. All that was before the end of the summer. (3) In October they brought up 200,000 men against Warsaw alone; were beaten, and retreated at the rate of 10 miles a day, suffering a series of heavy actions as they fell back. (4) At the same time they fell back from the middle Vistula with another 200,000, fighting the whole time and necessarily losing heavily in abandoned wounded. In every such retirement after heavy action great numbers of wounded men fall into the enemy's hands. (5) Considerable bodies of them have passed the Bzura between December 10th and 25th and have been thrust back across that stream again leaving their wounded. (6) In the prolonged action a month ago, from Ilowo to Lodz, the whole district for 30 miles behind the mouth of the trap in which they were so nearly caught (that is, behind Glogvno and Strykov) was strewn with the wounded of the whole Army Corps and with innumerable small isolated bodies which surrendered. It is ridiculous to suppose that in a series of fluctuating actions of this kind the various retirements have not abandoned at least 50,000 wounded men; double that number is far more probable, and there must be many unwounded prisoners as well.

An estimate of 17,000 is one of those extra-

ordinary statements which, like the 15,000 British drowned in the Yser, the fortified naval base of Scarborough, and the denial of the siege guns in front of Osowiec, leave every critic bewildered.

Something must be intended, some effect must be expected, but what it is no one living out of the German atmosphere can understand. And, I repeat, these monstrosities are the more remarkable, from the fact that they are embedded in a mass of perfectly cold and reliable summaries. So much for prisoners; they are losing a little more rapidly than we are.

We have already seen what the proportion of casualties is in the much more serious category of killed and wounded. We know that of the German forces alone not quite *four* men have been hit to the French *one*, although the German forces have never been double the French. We know this, not from induction, but from official statistics published upon both sides. We can confidently say that the recent fighting in Poland, with its continued and unsuccessful assaults in close formation, has been just as murderous as the fighting in Flanders. What the total German casualties to date may be we do not know, but we shall know them soon, because the German authorities are still careful to publish those statistics.

What is perhaps more important for us is the German margin, and it can only be repeated here what has been said so often in these columns and what mere arithmetic should prove true, that this margin is certainly not more than $2\frac{1}{2}$ million men. From 7 or at the most $7\frac{1}{2}$ take 5, and 2 or the most $2\frac{1}{2}$ remains. It is much more likely to be under two million than over. It can be enormously swelled by using boys, slightly swelled by using old men; but the use of either of these categories of material is worse than useless to an armed force, and only accelerates its failure.

Mr. BELLOC's next lecture at Queen's Hall on the War will be on Wednesday, January 27th.

THE WAR BY WATER.

By FRED T. JANE.

NOTE.—This Article has been submitted to the Press Bureau, which does not object to the publication as censored, and takes no responsibility for the correctness of the statements.

THE MEDITERRANEAN.

AS usual, there is little to report. True, the Austrian battleship *Viribus Unitis* is reported to have been submarined in the engine-room, and the report, though unofficial, has been more or less confirmed, and is probably quite correct.

Since, however, the Austrian Fleet is steadily pursuing a policy of remaining in harbour, the disablement of a Dreadnought more or less cannot materially affect results.

On the other hand, there are decided indications of a remarkably smart piece of work on the part of the French submarine concerned, if, as reported, she was attacked in Pola Harbour.

The *Viribus Unitis* is the first Dreadnought to be submarined, also the first ship to survive submarine attack. Here, at any rate, is a vindication of the Dreadnought policy; even though nearness to a dock may have contributed to the battleship's survival.

The safety of a Dreadnought against submarine attack lies in her bulk—she is too big for a sudden inrush of water to have any immediate effect. Also, of course, she is constructed, with a view to surviving underwater attack, far more thoroughly than were the ships of an earlier era, when the torpedo was a much less dangerous weapon than it now is. One has necessarily to write on imperfect information,

but, since all Dreadnoughts have some form of armoured underwater protection, it would look as though the protection hitherto deemed sufficient has proved insufficient in practice, even against the comparatively mild torpedoes used by the French.

Here, incidentally, it may not be irrelevant to refer once more to the circumstance that the German torpedoes appear to carry a far more powerful and violent warhead than any used by the Allies. Most or all of our ships which have been submarined went down swiftly to the tune of a terrific explosion: those of the enemy bagged by us have gone down in a



more or less leisurely fashion. The inference is that Germany is ahead of the rest of the world in the matter of high explosives.

The integral idea of all Dreadnought anti-torpedo protection consists of some internal armour on vital spots, and solid bulkheads. To meet this an American naval officer invented a torpedo which is practically an eight-inch gun in miniature. On contact it does not explode in the ordinary fashion, but instead discharges a high explosive shell into the enemy's inside.

The idea is not exactly novel: because a good forty years ago the Americans designed a ram called the *Alarm*, on somewhat similar principles.

The idea failed because the *Alarm* had to attack under fire, and because the ram proved itself at that period efficient without ulterior aid.

To-day, however, things have altered, and there is undoubtedly reason to imagine that the Germans have some adaption of the American invention mentioned above.

THE HIGH SEAS GENERALLY.

The most important event of the past week is undoubtedly the American Note. It is couched in very mild and courteous language, and entirely devoid of anything which could in any way be regarded as a threat. But it does very clearly establish the possibility of a situation which I discussed in one of the earliest of these articles.

In subsequent issues I have shown at some length how German attacks on British trade reacted on Germany in the Pacific, owing to the fact that neutrals suffered as much as we did, and how such results as they secured were negatived accordingly.

Now, there is no question whatever that America is hit by our interference with German trade. Not improbably she is hit as badly as Germany is hit. I have not the space necessary for a full consideration of details, but, in any case, the broad issue is the only thing that really matters. And this issue is that, just as in the American Civil War of fifty years ago we suffered from the Federal Blockade of the Southern States and individual British traders of ours sought to recoup themselves with "blockade-runners," so, to-day, individual American traders seek to recoup themselves with a modern and up-to-date form of blockade-running.

Here, however, the situation materially changes. In the American Civil War cargoes had to be run in direct to Charleston or elsewhere on the Confederate coast, and there they were exchanged for cargoes of other goods, which had to be run out again. In a word, it was all plain sailing.

In this war, however, there is no such thing as blockade-running to German ports. Trade is generally consigned to neutral ports, and all blockade-running takes place on land.

The net result of this is that the "right of search" on the water is considerably negatived where value for money is concerned. The really acute "blockade-runner" is apt to find a way round any rule of The Hague Convention; and as a general rule we may take it that his operations do not properly commence till his "contraband" is on the continent of Europe. To that extent, therefore, the naval "right of search" is more or less farcical, or, at any rate, more likely to inconvenience the honest American trader than the American blockade-runner.

Further, it may be observed that we have an inalienable right to ask Continental neutrals to prevent the smuggling of contraband, and that in a general way our desires have been conceded. They would be more easily conceded still perhaps were our list of contraband reduced to the things that really matter most—say, petrol, copper, rubber, and foodstuffs.

We have placed a ban on materials suitable for Zeppelin envelopes. But could we prevent Germany from obtaining petrol, we might well allow her to waste her money on silk of which she could make no use! I am inclined to think that there is a good deal of contraband which might be dispensed with, without loss to us and with advantage to neutrals whose "benevolent neutrality" would be very valuable.

Of one thing we may be certain. Germany does not conduct her elaborate and expensive Press campaigns in neutral countries for the empty benefit of moral sympathy. She has a clear eye to material benefits which may accrue from "benevolence."

We may do well, therefore, to follow her example; the more so as we could easily abrogate for this war a great deal of that "right of search" which, when first formulated, was based on the idea of war between countries possessing extensive coastlines. The coastlines of both Germany and Austria are so relatively small that much of the original idea is correspondingly superfluous.

To this extent, therefore, the naval "right of search" is obsolete; and, things being thus, we may do well to aban-

don it so far as may be. We are not fighting for legal traditions, but for ordinary existence. And—so far as can be gauged at present—things are such that the benevolence or otherwise of neutrals will turn the scale in a very tight fight.

NORTH SEA AND CHANNEL.

On January 1, about 2.30 a.m., during a gale in the Channel, the old battleship *Formidable* was struck by a mine or torpedo. Accounts vary as to whether there were one or two explosions. The ship sank in three-quarters of an hour, only about twenty-five per cent. of her crew being saved.

In view of the weather conditions prevailing at the time, a mine is more probably the cause than a submarine, though, as our *E9* torpedoed the *Hela* in a considerable sea, the possibility of submarine attack cannot be altogether disregarded. If so, it represents very high technical skill on the part of the enemy, plus a very considerable amount of luck, for the *Formidable* must certainly have been encountered by accident, and also we have never yet heard of a night attack by submarines.

A mine is consequently much more probable, especially since during the recent heavy gales a good many must have broken adrift. In the Russo-Japanese War the Japanese cruiser *Takasago* was lost in almost identical circumstances, and some time after the war had ceased one or two merchant ships met disaster from mines which had broken adrift in past gales and floated about ever since.

Theoretically, of course, a mine which breaks adrift should automatically become innocuous, but in actual practice there are bound to be one or two equivalents of the occasional misfire which happens with a gun.

We may, I think, acquit the Germans of deliberately having sown floating or drifting mines in the Channel and North Sea. So far as the latter is concerned, the circumstance that their battle-cruisers came out for the East Coast Raid seems conclusive evidence against any haphazard and non-systematic mine sowing there; and since their submarines have more than once been reported in the Channel, the same thing would apply. A drifting mine is just as likely to be hit by a friend as by a foe.

Along this line of argument one must put the loss of the *Formidable* into the same category as the loss of the *Bulwark*—that is to say, pure chance and accident.

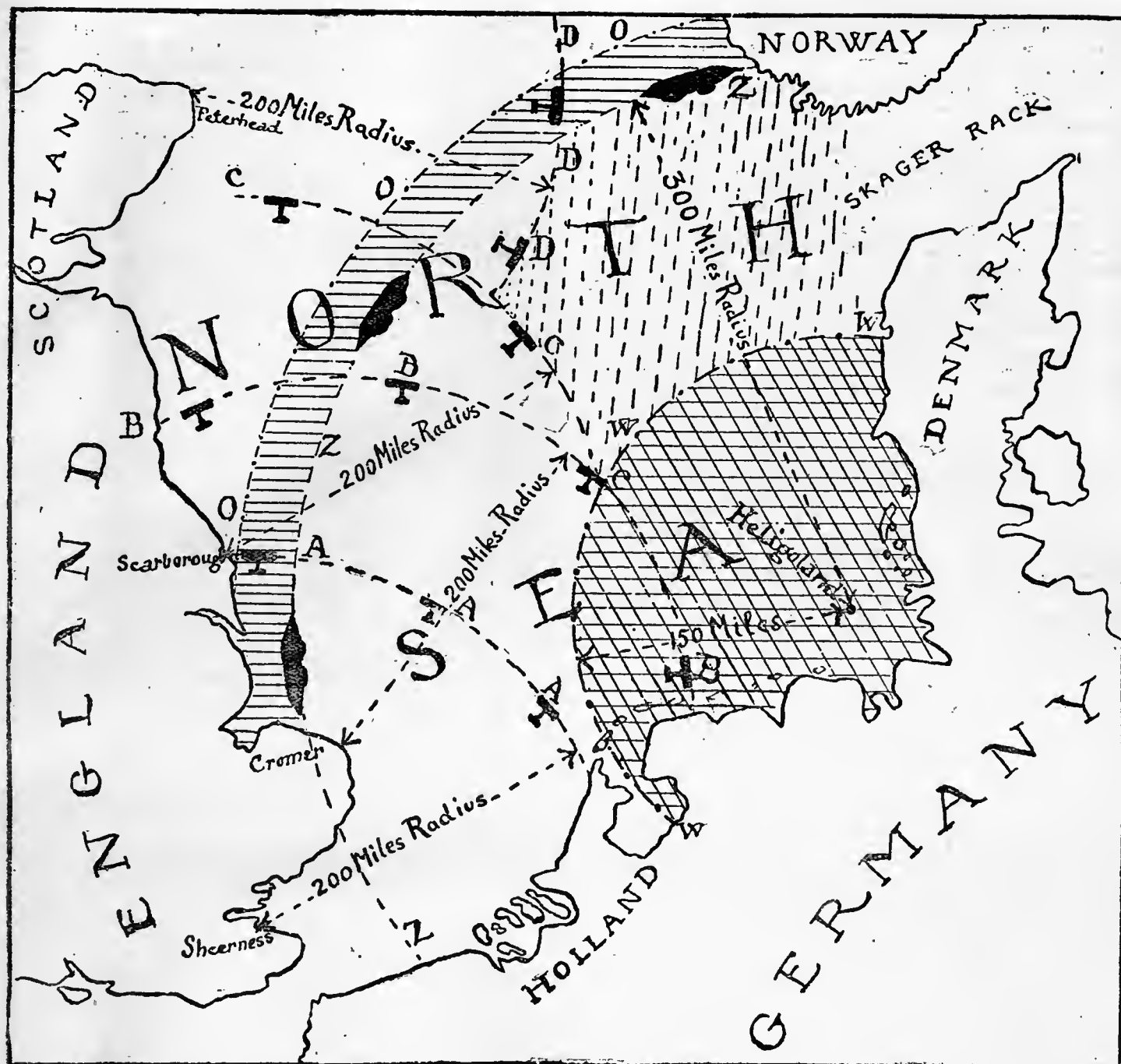
Some of my readers have conceived an impression that infernal machines were introduced on board both vessels, but this theory is untenable for at least two definite reasons. In the first place, were deliberate internal destruction sought, far more important fighting units would have been selected. In the second place, the organisation of a British, or, for that matter, any other man-of-war, is such that no matter the will to do so, the accomplishment would not be possible. The count against Germany in real crimes against civilisation is sufficiently heavy to obviate any necessity for further imaginary ones.

As for the *Formidable* herself, she was no loss to speak of as a fighting unit. A good ship in her day, the Dreadnought era rendered her obsolete before her time. The really serious loss, as the *Times* naval correspondent has insisted, is in the matter of *personnel*, because while good soldiers can be made in a few months, it takes as many years to make a good sailor.

Fortunately, we have a considerable supply of trained men; but the supply is not inexhaustible, and we are adding ships to the Navy more quickly than we are losing them, and the new ships in all cases require larger crews than did the old ones. Consequently, though the material loss of the *Formidable* may be relatively insignificant, the loss in *personnel* is of the nature of a disaster, quite apart from the ordinary ethical meaning of the word where human life is involved.

From January 5 to January 11 inclusive the Victoria Gallery, 123, Victoria Street, is occupied by an exhibition of competitors' work in the competition organised by *Colour*, the shilling monthly magazine which is doing good service in the furtherance and support of modern British and Continental art. The exhibition is extremely interesting, representing as it does the efforts of new, and in many cases unknown, aspirants to artistic success; here and there crudity is evident in the work shown, but there is sufficient talent in many of the drawings to command notice, and here and there one may find work that passes beyond mere talent. The judges of the competition include the leading British artists.

In *War and the World's Life*, of which Messrs. Smith, Elder and Co. have now issued a five-shilling edition, Colonel Mande follows out the Clausewitz theory of war as a part of a nation's development, and shows clearly how Clausewitz, Bernhardt, and the whole school of German philosophers and national guides went wrong in not recognising that the survival of the fittest meant the fittest in an ethical sense. Although originally published six years ago, the book was written with a view to such a situation as has arisen out of the German thirst for dominance; and embodies the sound, reasoned views of a practical writer on the principal topic of the day.



THE AIRSHIP IN NAVAL WARFARE.

A NEW FACTOR IN THE NORTH SEA OPERATIONS.

By L. BLIN DESBLEDS.

FROM the military point of view there are, broadly speaking, two important qualities which the modern airship possesses, but which the aeroplane still lacks. These two qualities are:—

- (1) Capability of remaining stationary over any given point.
- (2) Ability to navigate at night for a considerable length of time.

On account of its capability to remain stationary, an airship can observe, in detail, a constantly changing situation; the results of its observations can be transmitted, by means of wireless telegraphy, to the Commander-in-Chief, and "contact" with the enemy can thus be maintained. The aeroplane, on the other hand, must travel in a circle, round and round any particular spot over which it is desired to make prolonged reconnaissance, and, in order to bring back to Headquarters the information it has obtained, it must lose "contact" with the "situation."

The range of the wireless apparatus of a modern Zeppelin being about 150 miles, and the speed of a military aeroplane being about seventy miles an hour, it follows that a message sent from the airship would reach its destination much earlier than if it were carried by an aeroplane.

It would seem, therefore, that, so long as no flying machine exists which can remain stationary over a predetermined point and transmit by wireless telegraphy the result of its observations to Headquarters, there is a part that it cannot

fulfil, but which can be fulfilled by the airship. In the present war, so far as land operations are concerned, the Zeppelin has been unable to perform that important function in aerial operations for two reasons. *Firstly*, the anti-aircraft guns of the Allies would not allow it to come sufficiently low to make detailed observations; and, *secondly*, in maintaining a stationary position, it would be a relatively easy prey to the quick and small aeroplane.

On the open sea, however, these two dangers, which, on land, would threaten a Zeppelin engaged in carrying out detailed tactical observations, would not exist to any important degree. Whereas, on land, an anti-aircraft gun can be placed almost anywhere, on the high sea it must be placed on a ship, which would be visible from the dirigible. And, on account of its greater radius of action, an airship could, with ease, carry out observations from a position that can, only with great risks, be reached by an aeroplane. This point can be illustrated by actual figures.

SOME AIRSHIP AND AEROPLANE RECORDS.

The greatest distance flown over sea is that traversed by the Norwegian airman, Gran. On July 30, 1914, he flew in a monoplane, from Cruden Bay, in Scotland, to Kleppe, in Norway, thus covering a distance of 320 miles. Over land,

However, a distance of 487 miles was flown by the Italian airman, Deroye, on July 17, 1913, this being the record, up to date, of a non-stop flight in a straight line. We can thus, until any further record is established, assume that no existing aeroplane can, with a reasonable margin of safety, undertake a flight over the sea of a distance greater than 400 miles. The conclusion is, therefore, that, for the present, the radius of action of an aeroplane flying over the sea is about 200 miles.

If we now examine some airship records, we find that the French airship, *Adjutant-Vincenot*, left its shed at Toul on June 20, 1914, and made a non-stop voyage in a circuit, passing over Toul, Commercy, Verdun, Sedan, Mézières, Mauberge, Compiègne, Paris, Versailles, Paris, Meaux, Châlons, Vouziers, Montmédy, Longuyon, Nancy, Neufchâteau, Mirecourt, Commercy, Toul, thus showing that, for a considerable part of its journey, it must have travelled with the wind.

On that voyage, which lasted 35hr. 20min., the airship carried a crew of eight, besides Captain Joux, who was in command. This performance of the *Adjutant-Vincenot* is the record for duration in a "closed circuit" voyage, that is, one in which the airship eventually returns to its starting-point. Recently the Zeppelin L.Z.24 remained in the air for 34hr. and 59 min., travelling in various directions over Germany. It did not, however, make a "closed circuit," for it started its voyage at Friedrichshafen and ended it at Johannistal.

RADIUS OF ACTION OF THE ZEPPELIN.

In examining duration records, it is important to bear in mind the fact that the sustentation of an airship, or its power to remain aloft, is independent of its propulsion. It is, therefore, possible for the airship to remain aloft without the working of its motor, or motors, thus economising fuel whenever it is possible. The aeroplane, however, has to work its engine during the whole of its flight, for, without propulsion of its own, it has no sustentation. Therefore, it follows that in establishing duration records, an airship may take advantage of the wind to go from one place to another; so that a duration record of this type of aircraft is evidently considerably greater than the length of time of its possible navigation under full power. Also, when concerned solely in the establishment of a duration record, the airship has not on board a full crew, as would be necessary for prolonged military observations, nor has it a supply of projectiles and of ammunition. Under such conditions a greater amount of fuel can be carried than would be possible when the airship is out for a military cruise. In these circumstances it can be assumed, with a fair degree of accuracy, that the probable duration of an airship voyage under full power is, at present, about one-third of the record times already mentioned, that is, one of about twelve hours. A Zeppelin, having a speed of fifty miles per hour, would thus be able to travel, under war conditions, a distance of about $12 \times 50 = 600$ miles. Consequently its radius of action would be about 300 miles. That of the aeroplane is, as already shown, only 200 miles. The

importance of these figures, and of the airship's possible influence on the North Sea operations, will be readily grasped if reference be made to the sketch-map on the previous page.

THE ZEPPELIN IN THE NORTH SEA.

The Island of Heligoland, off the coast of Germany, is not only a naval base, but also the most up-to-date Zeppelin station. From it a modern Zeppelin can undertake cruises of considerable length over the North Sea, and can survey the greater part of that portion of the Atlantic Ocean. Indeed, an airship, having a radius of action of 300 miles, can travel from Heligoland to any point bounded by the arc, Z, Z, Z. From any position on that arc, Z, Z, Z, a Zeppelin, at a height of, say, 4,000ft., could, in fine weather, make observations over a further distance of twenty-five miles, so that, although the range of action of a Zeppelin from Heligoland would be limited by the arc, Z, Z, Z, its range of observation would extend up to the arc, O, O, O. The section-lined area, contained by the arcs, O, O, O and Z, Z, Z, is a belt which, under normal conditions of wind and weather, would be beyond the radius of action of a Zeppelin, but over which it would be able to keep watch. Zeppelins, stationed at Heligoland, could, therefore, observe over the thousands of square miles of sea area which lie between the arc, O, O, O, and the coast of Continental Europe.

Observation, carried out by the Zeppelin over the North Sea, could not be sent by wireless telegraphy unless the airship were within the cross section-lined area, bounded by the arc, W, W, W, and the mainland of Europe. The radius of the arc, W, W, W, is 150 miles, which is the range of the wireless telegraphy apparatus fitted on a modern Zeppelin. If a Zeppelin, therefore, has made an observation beyond 150 miles from Heligoland, it would have to return to within that range before it could send its wireless message. This is an important point to remember in dealing with the new factor which has been introduced into naval warfare by the advent of aircraft, for it shows that it is only within the arc, W, W, W, that a Zeppelin can maintain contact with its adversaries and Headquarters.

If we now examine the radius of action of the aeroplane from various points of the English coast, we shall see that, with an aviation base near Sheerness, observations can be carried out within the area contained by the arc, A, A, A. From a point near Cromer aeroplanes can scout the sea area within the arc, B, B, B. With Scarborough as centre, observations, by means of aeroplanes, can be carried out within the arc, C, C, C, and, from a point near Peterhead, aeroplanes can make observations within the arc, D, D, D.

Of all the various circles that can be described with a radius of 200 miles about a centre lying on the English coast, the one drawn from a point near Cromer cuts the greatest area of the Zeppelin wireless zone. This is useful to note.

Another point of practical importance is that there is a zone in the north-east of the North Sea which can be scouted by means of Zeppelins stationed at Heligoland, but which cannot be reached by aeroplane from the British coast. That zone is denoted by dotted lines in the sketch.

THE LOSS OF THE "FORMIDABLE."

By COL. F. N. MAUDE, C.B. (late R.E.).

THE heavy loss of trained and most highly effective seamen, which seems to form an inevitable feature of the sinking of any of our warships, simply compels one to ask the question, whether, in fact, all means of keeping our fighting vessels afloat after submarine attack, in any of its forms, have been considered, and put through a fair and conclusive trial.

I make no apology for venturing outside the usual limitations of my articles, for the subject has interested me for years, and as an officer of the Royal Engineers, a corps formerly entrusted with the business of submarine coast defence, it was part of my duty to make myself thoroughly familiar with the problems involved in modern battleship building, and in particular to follow all the records of experiments made with submarine mines against such vessels which from time to time the Admiralty placed at our disposal. The *Oberon* and the *Resistance* are the first two whose names recur to me.

I saw 500lbs. gun-cotton mines exploded under them at different times, afterwards studying their effect in dry dock, and I was as convinced then as I am now that even that charge should not necessarily send a ship (such as we were then building) to the bottom, or such as we have since built,

unless the mine happens to explode the ship's magazine, as it would appear does occasionally happen, though theory is quite powerless to explain the how or why of this occurrence. But service in India called me away, and it was only after the Japanese War that I approached Sir William White, who had just retired from the Admiralty, and discussed my scheme with him. Unfortunately, we differed fundamentally on facts of which I had been an eye-witness and he had not seen, and again, since the matter was not one in which I was directly concerned, I allowed my patent to lapse, and resolved to stick to my own last.

My idea was exceedingly simple, and can be tested by anyone who will try to force an empty biscuit tin, mouth downwards, in his bath—when the resistance he will encounter will astonish him.

It was not applicable for merchant steamers, because, as a rule, it is uneconomical to subdivide them by a horizontal plane, which interferes with the facility of loading and unloading cargo. But all our warships, from small protected cruisers upwards, are so subdivided by the armour plate turtle-deck running right through them from bow to stern, and beneath which all the engines, boilers, magazines, etc., are always placed. This turtle-deck is pierced with hatch-

ways sufficient for the service of the ship, which can be closed down whenever it is necessary to use forced draught. This means filling the space below the deck with compressed air at a pressure of three or four inches of water, say a couple of ounces only to the square inch.

Now, considering a vessel with a turtle-deck and a big hole rent in her bottom (as large as you please), it is clear that we have a somewhat distorted case of the old "diving-bell," familiar in every textbook of physics for the last century at least, in which the persons in the bell are kept dry by pumping in compressed air as the bell descends—the pressure of air inside being kept equal to the weight of the head of water outside.

This "diving-bell" idea is in daily use all over the world by civil engineers for getting in deep water foundations, making tunnels under river beds, etc., and this at depths far greater than anything required even in our biggest battleship—in which a pressure of one atmosphere only would be required to counterbalance the weight of a thirty-foot column of water outside. At this depth men feel little, if any, discomfort, and can work for fairly long spells. All that is required to fit out a cruiser or a battleship in this manner is the provision of what are called "pneumatic locks" at the hatchways to enable the men to get in and out to their duties.

Now, to the best of my recollection, the rock on which Sir William White and I split was briefly this:

He contended that if a ship was struck by a mine fairly, the shock would be so great that the vessel would break up structurally, and therefore the safeguard I proposed would not be worth employing; I maintained that neither the *Resistance* nor the *Oberon*, nor, in fact, any fighting ship of which I had ever heard, had been damaged structurally to this extent, even by 500lb. charges of gun-cotton, which was double the charge usually employed in torpedoes or contact mines. So far the experiences of this war and the Japanese have proved that I was right on this point, for except when the *magazine* has been exploded, all ships, even merchantmen of quite moderate tonnage, have floated quite a reasonable time, thus demonstrating that the structural damage has been small.

What I believe is now required is for a committee of influential civil engineers and civilian naval architects to take up the question, and to extort from the Admiralty a definite reasoned statement of such experiments as have been made in this direction, and *why* or in *what* point they failed.

There may be some obscure reason connected with the working of the ship to justify the neglect of such experiments—but against this I noticed that the Annual Report of the U.S. Naval Department a few years ago stated that experiments with compressed air had given satisfactory results.

But even if the "pneumatic lock" difficulty is really the crux of the case, and reconstruction of older types is out of the question, there seems no reason why we should not give an extra five-feet depth to the double bottom, which is, or can be, structurally isolated from the hold of the ship, and then keep this permanently full of compressed air. It would be equally effective in keeping out the water.

At any rate, it seems to me only right that in such an important matter the country should be informed in a manner intelligible to competent civil engineers, who know all about the use of compressed air, whether full and conclusive experiments have been made, and why they have led to no results. I know that a few years ago a great many naval officers fully shared my view of the matter.

I should like to take this opportunity of acknowledging the many valuable letters I have received from readers of this paper, and to apologise for my failure to answer all of them—pressure of work being my only excuse. I may add that, with exceedingly few exceptions, the suggestions these letters contain are not new, and for the most part are already in the Service or about to be adopted, if the campaign lasts long enough.

CORRESPONDENCE.

TO DESTROY SUBMARINES.

To the Editor of LAND AND WATER.

SIR,—I have been struck with the many brilliant suggestions towards helping on the work of the Allies ashore and afloat, but I have thought of two other plans which, as an armchair critic, seem to me feasible, and which I have not yet seen in print:—

Why not acquire the three or four motor-boats, "Maple Leaf," "Despujols I. and II.," etc., which have done over fifty miles an hour? In calm weather, such as the Cuxhaven attack enjoyed, they would be invaluable for locating and destroying the periscopes of the submarines. As they only draw about eighteen inches of water, no torpedo could

touch them. In speed no submarine or destroyer could catch them, and being such small marks, they would be nearly impossible to hit at the pace at which they could travel.

Each might have a small quickfiring to destroy periscopes. In fact they could easily come alongside and break or destroy the latter by pulling an oil drum or something of the kind over them.

Another suggestion occurred to me on reading the account some weeks ago of a submarine which got caught in a fishing net, and had to come to the surface to get disentangled. There are miles and miles of old nets in all our fishing villages, and these could be put outside of the harbour to be attacked by our fleet, and on the enemy's submarines coming out they would be immediately caught by them, and would have to come to the surface at a place of which the Allies would have already got the range. The nets could be sunk to any depth, and would make an almost impenetrable wall, as they would effectively stop the propellers of the submarines, in which they would get twisted up; and anyone who has done any fishing in a propeller-driven boat knows how difficult it is to get even a single fishing line free when caught in a propeller.

I offer these two suggestions for what they are worth.—I am, dear sir, yours faithfully,

Dungarvan Club, co. Waterford.

ROBERT T. LOUGAN.

A BULLET TO DESTROY ZEPPELINS.

To the Editor of LAND AND WATER.

SIR,—Your correspondent, Mr. D. S. Macnair, suggests that as it is accepted that the ordinary rifle bullet would be useless to destroy Zeppelins, it should be an easy matter "to design a hollow bullet containing a charge of some pyrotechnic composition which would ignite when the rifle is fired."

Permit me to point out that such a bullet has been designed recently by Mr. Charles E. Dawson, of Uckfield (whom I may mention, incidentally, is the discoverer of the famous Piltown skull). The following description of the bullet and the accompanying design appeared in a recent issue of the *Sussex County Herald*:—

"An ordinary bullet is bored at the apex to form a cavity, which is filled with phosphorus and a small portion is allowed to project beyond the apex of the bullet. On discharge the phosphorus is heated, and it flames, or is predisposed to flame, on coming into the slightest contact with another body. Thus on coming in contact with an airship it would immediately ignite the gas, and the machine would be destroyed. An ordinary bullet would, of course, merely penetrate the envelope without doing further damage.

"Mr. Dawson's bullets are intended merely for the destruction of airships, and when not in use must be kept under water to preserve the phosphorus. The smallness of their size is an advantage over the shells, which may destroy buildings. The bullets must be used with care and not for ordinary uses, as considerable damage by fire might be done."—Yours faithfully, ARTHUR BECKETT.



"MORAL" AND "MORALE."

To the Editor of LAND AND WATER.

SIR,—With all deference to Mr. Bello, the reason why we spell (or used to spell) "morale" with a final *e* is not far to seek. We borrowed the word from the French in the eighteenth century, and in French, as everyone knows, it is spelt *moral*, but we already had the word "moral," which is an adjective, and is pronounced with the stress on the first syllable: the word which we borrowed is a substantive, and (as we pronounce it) has the stress on the second syllable, so we gave it a final *e*, partly in order to distinguish it from the adjective "moral," and partly to indicate the difference in pronunciation. The spelling *morale* was universal from the eighteenth century until quite recently, but unfortunately a year or two ago some wiseacre discovered that the French word is *moral*, and so now we think we ought to alter a time-honoured spelling in order to show that we know the origin of the word. If Mr. Wiseacre is logical, he will suggest that we ought to write "sovereign" instead of "sovereign," and "naïf" instead of "naïve."—Your obedient servant,

CHARLES SWEET.

CITY OF LONDON

RUSSIAN CAVALRY AMBULANCE PRESENTATION.

UNDER THE GRACIOUS PATRONAGE OF
H.M. QUEEN ALEXANDRA

AND

H.R.H. PRINCESS ARTHUR OF CONNAUGHT.

THE MANSION HOUSE,

NEW YEAR'S DAY, 1915.

Russia is losing thousands of men daily through want of proper motor ambulance transports.

Do we Britons realise what Russia is doing for her Allies? Russia has not the facilities for the manufacture, or the possibility of obtaining motor vehicles such as England, France and other European countries possess.

As a comparison, Britain's cavalry losses are extensive enough on a fighting line of about 40 miles in extent; imagine what Russia's are, with imperfect communication, on a front extending from the Baltic to the Black Sea, a distance of nearly 1,200 miles.

The object that this committee has in view is to show England's appreciation of these facts and to remedy as far as lies in their power this most trying position.

It is, to-day, superfluous to point out the vital assistance which Russia is giving the Allies. Without the pressure which her magnificent forces are constantly exerting on the German-Austrian armies, the redemption of Belgium would be indefinitely postponed, and we in England would not feel the present increasing confidence that the final victory will lie with our troops.

But while Russia's resources are potentially unlimited, her powers of immediately equipping the masses of fighting men she is pouring forward are greatly handicapped. The territory where the fiercest fighting is taking place had, even before its devastation by the Germans, comparatively few railways or roads affording quick transport. The brunt of the hardship which these conditions impose on wounded Russian troops falls most severely on the cavalry, which number more than the combined cavalry of all the other Allies, and to whose brilliant operations the successes of Russian arms have been largely due.

In the Carpathians and in Poland the Russian Cavalry operates on a front often fifty miles away from a base, covering the flanks of the army and screening its advance. The case of the wounded Russian cavalryman, however, is best stated by Lieut.-Col. Roustam Bek, in the *Daily Express*, who writes with an intimate knowledge of his subject:

"The situation of wounded cavalymen at present is terrible. The troopers are obliged to undergo many tortures while being carried on horseback or in horse-drawn ambulances for many hours or days until they reach the field hospitals. Many of them are dying when they reach these refuges, being unable to withstand this terrible journey. If they could have been brought in a shorter time to the hospital their lives could, in many cases, perhaps in the majority, have been saved.

"In general, the Russian ambulance equipment is not inferior to that of other countries. It can, however, easily be understood that in the presence of such an enormous number of casualties as have been recorded during the present war, as well as in regard to the great distances which have

to be covered from the actual fighting line to the base hospitals conditions which did not exist during former wars, put every army in the greatest difficulty in regard to the transportation of the wounded.

"Almost all the frontier railways in Western Poland have been destroyed by the invaders, and for the most part communication by motor cars is reserved for concentration purposes. This involves the Red Cross in great difficulties in increasing the number of motor-ambulances, for there are not enough motor-cars in Russia, although the number in war service is so gigantic, fully to supply this purpose also. Every special motor ambulance would, therefore, be of the greatest help to the Russian army, and especially to the Russian cavalry.

"I know what it is after being wounded to be carried by a horse-drawn ambulance for ten hours, and I can realise keenly by my own experience how splendid is the idea to help the Russian cavalry. How many thousands of poor suffering Russian soldiers would have benefited by such ambulances, how many would have been drawn from the pitiless arms of death, and how great will be their thankfulness to those who inaugurated such a humane idea and helped to realise it!"

The gift of ambulances, which is under the patronage of H.M. Queen Alexandra, will be made direct to Her Imperial Majesty the Empress of Russia, as Head of the Russian Red Cross. They will be in units of not less than ten ambulances each, the first of which it is hoped will be shipped complete in January. Further units will follow, making the presentation worthy of the City of London, and of the cause to which they are dedicated.

In thus giving expression to the friendship and gratitude of the English nation towards Russia, the City of London follows ancient precedent. Of late years, under the auspices of our own Foreign Office, intercourse and commerce between England and Russia have immensely increased. To-day, throughout the vast Russian domains, comprising one-sixth of the habitable globe, the name of Englishman is everywhere honoured, and his better acquaintance is eagerly sought. Not the least of the beneficent consequences which will result from such a gift, made at such a crisis, will be the increase of our national prestige and of our friendly and commercial relations with this great country.

The committee, therefore, feel justified in approaching with confidence those who have interests, direct or indirect, in Russia, or in the numerous Russian affairs that centre in the City of London.

The estimated cost of each unit of ten cars, with accessories and maintenance for three months, is £6,500. The services of the drivers are voluntary.

Besides cash contributions, the Committee will gratefully consider offers of motor-car chassis suitable for fitting to ambulance bodies, as well as for offers of voluntary service as drivers. Arrangements have been made for the publication of the subscription lists in Russia.

This is the only fund being raised specifically by the City of London.

All cheques should be made payable to the hon. organising secretary, Mr. W. E. W. Hall, 33, St. Swithin's Lane, London, E.C.

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Readers of the special articles appearing in this Journal on "The World's War by Land and Water" will doubtless wish to retain in correct rotation this remarkable series of articles by HILAIRE BELLOC and FRED T. JANE. We have, therefore, prepared special cloth binders to hold the first thirteen numbers, at a cost of 1s. 6d. each.

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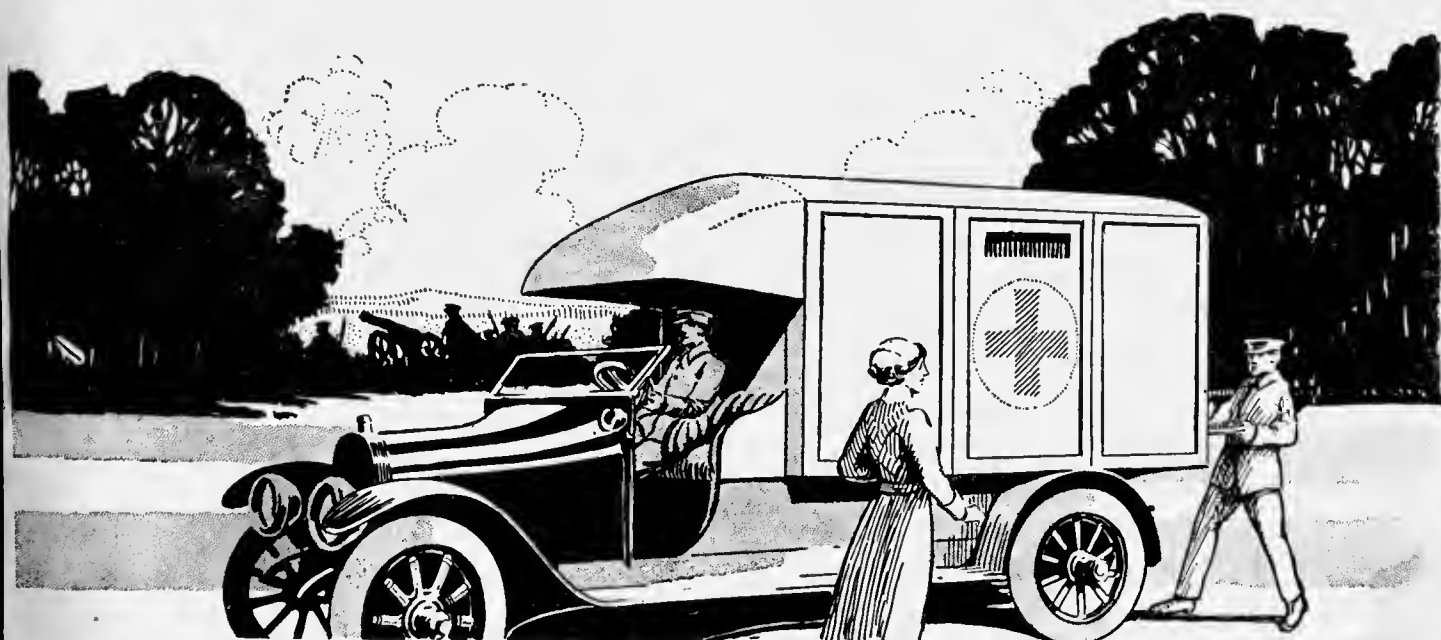
Aiding the wounded



Never in history has better or more skilful attention been given to the wounded than during the present great war, and the petrol-driven motor ambulance and hospital have given invaluable aid in the great work of mercy. Throughout the war-swept area red-cross conveyances of the allied forces are run upon

'SHELL' MOTOR SPIRIT

and can therefore be thoroughly depended upon. It is well to remember when purchasing petrol to say 'Shell' and insist upon it. It is supplied for all the services of the allied forces only and is obtainable everywhere.



THROUGH THE EYES OF A WOMAN

The Trend of the Times

ALICE in Wonderland's "Duchess would have been in her element nowadays, for numerous are the morals to be drawn and many the people who draw them. Moralising, indeed, is like nothing so much as an infectious disease, so fatally easy is it to catch the habit. It was, perhaps, but to be expected that Christmas should give the moraliser a rare opportunity. The contrast between the season of peace and good will and the greatest war in history was obvious, but not too obvious to form the text for many a theme." Now and again these sayings grated, yet once in a while they rang true and well, either giving us new thoughts, or crystallising those vaguely felt but as yet unexpressed. But if Christmas be allowed as a moralising season for the moraliser let not the same hold good where the New Year is concerned. There will be plenty of time to moralise when the war is ended; at the present there is too much call for active work to permit of such an indulgence.

So much is happening besides, where the very idea of moralising is nothing short of an impertinence. The platitudes of conventional sympathy have rightly seemed inadequate in many scores of cases where the hand of the war has pressed heavily. And the same, in a lesser degree, holds good about those whose nearest and dearest are still forming part of the fighting line. The would-be comforting remark is sometimes apt to lean towards the sententious and thereby miss its aim. The simpler the sympathy given the more we can be sure it will be valued, and if it can be expressed in deeds, without a single spoken word, so much the better.

The Inside of a Week

Rumour, for once, has proved herself to be anything but the lying jade of her reputation. Some weeks ago a whisper went round of Lord Kitchener's intention to give leave of absence from the front to our fighting men in France, and experience has shown this correct. Soldiers, many of whom have been in the war area ever since August, have been home

for a brief four days, and in scores of happy instances took the family circle by surprise. It would be easy enough to draw poignant pen pictures of these reunions, but any of that which came beneath my more immediate notice would most assuredly be exaggerated. And this for the very simple reason that neither husband nor wife dared to let themselves go. The end of the short four days and its inevitable parting loomed too near. Any breakdown, any painful scenes, had to be avoided at all costs, and avoided they were until the final good-bye had been said and the little wife could drop her mask of iron self-control.

She told me that this parting was infinitely worse to bear than the first one, and this is easy to understand. There are no illusions left now about the sheer horror of this war, and the weeks of scanning the casualty lists and fearing a dread telegram from the War Office have had their effect upon the strongest nerves. Women who said good-bye to their husbands and sons when the Expeditionary Force first sailed for France had a sad enough parting, indeed, but there was a merciful veil of ignorance over all the campaign would mean. Now they know well enough the grimness of the task set, and much else upon which it is wiser not to dwell. So all that remains for the women left behind is to keep busy—so busy that for thinking there is but little time, and for nerve-racking worry still less.

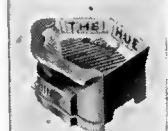
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BURBERRYS' annual half-price sale commenced January 1 and is still running. A large section of the vast basement and first floor of their palatial showrooms in the Haymarket are entirely devoted to this sale. To the usual attractions afforded by the well-known quality of goods disposed of, must this year be added an immense assortment of men's suits from their completed suit department. An illustrated catalogue of the sale, including both men's and women's dress, will be forwarded, post free, on receipt of a post card, by Burberrys, Haymarket, London, S.W.

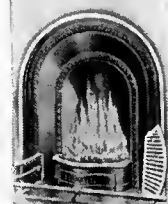
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SATURDAY, JANUARY 16, 1915

[PUBLISHED AS]
[A NEWSPAPER.]

PRICE SIXPENCE
PUBLISHED WEEKLY



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THE EARL OF DERBY, K.G.

Who has been working indefatigably and has given much valuable assistance as a speaker in the present recruiting campaign. He had conferred on him the distinction of the Order of the Garter as a New Year's honour.

More letters showing how OXO is valued at the Front

The reviving, strength-giving power of OXO has received remarkable endorsement in the great war. It is invaluable for all who have to undergo exertion, either to promote fitness or to recuperate after fatigue.

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From a member of the London Scottish with the British Expeditionary Force.

And so after all these horrors here I am living in a cow byre some way away from the firing line to recuperate. Like manna, however, your glorious box has arrived, coffee and milk, butter, Brand's Essence, OXO—oh joy! Never was seen a more glorious box, and all my cow byre is interested in it. We start to-night on our feast, and I am to thank you both from all my section for being so generous.

Reprinted from the "Globe," Dec. 12th, 1914.

A gentleman has sent us a letter from his son in the Army Service Corps in which he says:—

I must tell you how delighted I was to get the OXO. It is great. You should have seen us preparing it. We made a wood fire by the roadside, and boiled the water in an empty petrol can—enough for three of us. The OXO was made in my dixie can, in which we soaked some biscuits. We then placed the can on the fire to boil ; all the time it was raining hard, but we were repaid by the satisfaction we got for our efforts.

I shall be very pleased to get some more when you are sending again, as a good cup of OXO before we turn in at night considerably warms us up.



From an A.B. on H.M.S. "Landrail."

In my opinion there is no better gift anyone could make to our bluejackets, especially at a time like this, and when the nights (and days) are so nippy as they are at present. Personally I think OXO is worth its weight in gold.

OXO is made in a moment and, with bread or a few biscuits, sustains for hours

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A manufacturer who is reduced to such a pass cannot have much confidence in his own goods.

DUNLOP

tyres, on the other hand, sell on their own merits alone, and have from the very first been advertised in accordance with the British standard of fair play and good taste.

In relation to the service they give, the prices are lower than any other, and that those prices are accepted and endorsed by the public is proved by the fact that since the first Dunlop motor tyre was made the demand has always exceeded the supply.

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THE WAR BY LAND.

By HILAIRE BELLOC.

NOTE.—This Article has been submitted to the Press Bureau, which does not object to the publication as censored and takes no responsibility for the correctness of the statements.

In accordance with the requirements of the Press Bureau, the positions of troops on Plans illustrating this Article must only be regarded as approximate, and no definite strength at any point is indicated.

A NOTE ON THE NATURE OF A BLOCKADE.

I THINK it has been pointed out in these comments that the essentials of a *siege* are that the operations of the *besieged force* are confined to a restricted area by the action of the *besieging forces*; so that it is the object of the besieged to force their way out and of the besiegers both to prevent the besieged from forcing their way out, and gradually to contract the area within which the besieged are restricted in their operation.

Subject to this definition, the present phase of the war may be accurately described as the siege upon an enormous scale of the Germanic powers.

A condition commonly but not necessarily accompanying a siege is that called the *blockade*. The essential of a blockade is that you prevent the means of livelihood from reaching the besieged, and also, of course, but as a secondary matter, the opportunity through munitions of continuing their resistance in arms.

You may have a siege without a blockade, as when an armed force is so restricted that it cannot break out and yet still possesses avenues of supply, or is permitted some forms of supply for political, religious, or other reasons by the besiegers. But you could hardly have a blockade without a siege, because no armed force would permit itself to be starved if it were able to cut its way out.

Now the present siege of the Germanies is remarkable for the fact that it is a true siege accompanied by a very imperfect blockade. The German and Austrian armies have tried very hard indeed to force their way out through the lines that contain them in France and Belgium and Alsace, to master Servia and get away out in that fashion, to break through the Russian lines in the East. They have hitherto failed in all these attempts. But in the blockade which should accompany such measures the besiegers have shown no consistent military policy.

I do not say that the besiegers have not shown a consistent moral or political policy: I only say that they have shown no consistent military policy.

If you desire to reduce your enemy by blockade you prevent his getting *anything whatsoever* of which he stands in need. The Romans in front of Jerusalem, for instance, or the Germans in front of Paris in 1870, did not say, "We will prevent arms getting through but we will allow food," or, "We will prevent the food for soldiers going in, but we will allow food for civilians." If they had adopted such a policy they might just as well not have had a blockade at all.

If the German Empire had the luck to cripple the British fleet and its lesser allies, it would establish a blockade with these islands. It would

not allow cotton to go through and thus keep Lancashire in employment, while forbidding rubber to go through, or copper, because these two articles were supposed to be of special military value. It would allow *nothing to go through*, for its aim would be the reduction of the blockaded party.

Now the blockade of Germany and Austria-Hungary cannot be absolute because hundreds of miles of frontier everywhere march with neutral powers, and the native products at least of those neutral Powers can reach the enemy at will. It may not even be possible to prevent a certain leakage from without through the agency of private individuals living in neutral territory who buy ostensibly for neutral purposes but secretly sell again to the enemy.

But there is a broad distinction between preventing all *you possibly can* from getting in and deliberately allowing whole categories of goods to come in, and even failing to do your best to prevent the entry of such categories as you have selected for contraband.

If you do not prevent everything you *possibly can prevent* from going into the blockaded area, then your blockade is imperfect and will almost certainly fail. You may have excellent moral, religious or political reasons for thus running the risk of losing the war; but you can have no *military* reason. As a military operation, to allow cotton, let us say, to go into Germany, and to forbid copper, is meaningless. What you are fighting is the whole nation with all its resources, economic and social, and inasmuch as you allow those resources to be fed, by so much do you increase the chances of the enemy's winning and of your losing, and by so much do you kill and wound your own soldiers, deplete your own wealth and prolong the duration of hostilities.

It is a matter upon which there can be no two opinions, and one upon which it is singular enough that there should be any confusion of thought.

Especially is a blockade imperfect when it allows matter which the blockaded country cannot get at all, save from outside, to go through, and yet sticks at matter which the blockaded country can, to some extent, find for itself. When, for instance, it allows cotton to go through and wastes energy upon preventing copper going through; or when it allows cocoa to go through and is anxious to prevent nitrates.

There are four causes, and four only, which may operate upon the government of the blockading nation to make the blockade of its enemy imperfect:

(1) Religion: as when it would be thought impious to prevent certain sacred objects, or certain men in discharge of a sacred office, from passing through the blockading lines. This objection is absolute, but it has to-day, I believe, little weight.

(2) Moral: that is when the various parties to a combat are agreed upon certain things as human and to be tolerated upon either side. Thus it might be thought inhuman to cut off water supply and yet tolerable to cut off food. The test in this case is whether the enemy would be willing to apply the same test as you apply to him. The morals differ from religion in this, that they are matters of contract and of reason.

(3) A greater military advantage to be obtained: as when you propose to bring in as your ally later on (or, what is the same thing, to prevent his fighting against you) someone whose supply of goods to the enemy in a staple matter of trade is vital to him; or when you yourself need such supply and fear its being cut off from yourself, if you offend the neutral by closing the enemy's market, and when the advantage so aimed at is greater than the disadvantage immediately suffered.

(4) A private interest: as when merchants becoming wealthy by export to the enemy, direct or indirect, prefer their advantage to that of the commonwealth and have power over the Government to make their advantage prevail—and this last

cause may operate in many ways and in the most roundabout fashion—through shipowners as much as by merchants—through men who fear any general diminution of trade throughout the world as ultimately certain to react upon trade they do themselves—through financiers who may pretend, or, if they are sufficiently stupid, believe that the counters with which they deal and the lubrication of exchange are equivalent to wealth itself, but who most commonly have no object but their personal enrichment, being men without national affections, and at large between all combatant parties.

Unless one of these four causes can be proved, and one of the first three (which alone are reputable) maintained, there can be no excuse for weakening in time of war the military action of the nation by rendering imperfect and impotent what might be a complete and potent military process.

It is incumbent upon those who prefer to leave the blockade of Germany imperfect to explain which of these causes they invoke for their action, and to make it quite clear that they have a better reason for leaving that blockade incomplete than they would have for making it perfect.

THE BATTLE IN THE CAUCASUS.

THE Russian victory in the Caucasus or, as it probably will come to be called, the Battle of Sarikamish, is an event of importance not so much from the numbers engaged as from the lessons it teaches upon the German direction of the Turkish Army at this moment and from its probable political effect.

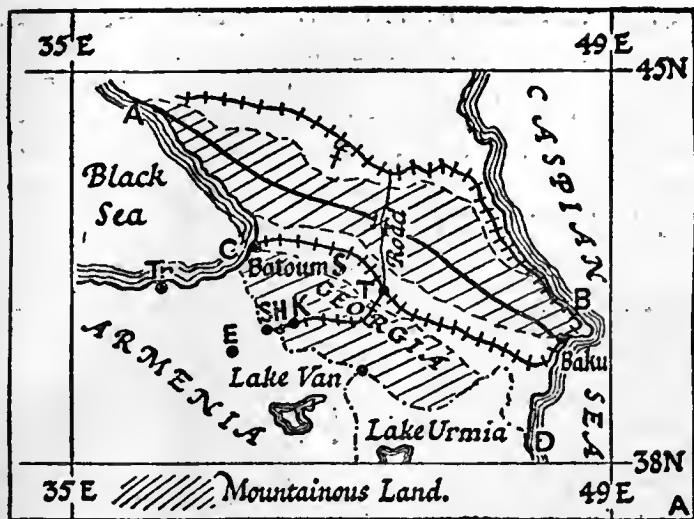
It has been suggested that the action will probably bear the name of the "Third Battle of Ardahan" because some part of the extended action was fought in front of that town while, in the same neighbourhood, two other conspicuous Russian victories have taken place; one in 1829, the other during the last Russo-Turkish War in 1877 during the Russian advance on Kars. But the centre of the action, the place where far the heaviest shock of troops took place, appears to have been near the railhead of the Kars Railway, within a few miles of the frontier, at the road junction of Sarikamish. And the telegrams that have hitherto reached us already call the battle by the name of this place.

In order to understand what has happened and the significance it has in relation to the German direction of Turkish military effort we must first appreciate the nature of that frontier and the proportion of the forces involved.

Take an oblong (see plan at top of next page) bounded on the north by the 45th Parallel and on the south by 38th Parallel, between Longitude 35 East and Longitude 49 East. That is, an oblong more than 450 but less than 500 miles across and about 700 miles long. Within such an oblong all the Caucasian territory where the Christian has pressed back the Turk during the last hundred years is comprised.

The broad isthmus between the Black Sea and the Caspian is the scene, a tract of land nowhere less than 300 odd miles across and upon the average more like 400. The boundary that looks as though it were fixed by nature between the one

Power and the other is the great Caucasian range of mountains, the ridge of which runs along the line A-B. It is one of the most complete natural barriers in the world, surpassing in this character the Pyrenees, and rivalling the mountains that bound India upon the north. Its highest summits touch from 15,000 to 18,000 feet, its principal passes do not sink much below 8,000 and 9,000; no railway has yet been driven across it, though, as in the case of the Eastern Pyrenees, the system manages to squeeze round at an extreme end between the mountains and the Caspian Sea. Only two main roads have been engineered from north to south through all the 500 miles of its extent. But this great chain, though it forms so complete a natural barrier, does not divide two civilisations; for religion, which is the determinant of culture, has produced for centuries Mahomedanism north of the chain, as it has preserved great bodies of Christendom, Uniate and Orthodox, to the south of it. It is this Christian majority to the south in what is called *Georgia*, and beyond this again in the mountains of *Armenia*, to which the Russian effort has perpetually been extended. And its last limit before the present conflict (a limit fixed in 1878 after the war of 1877 by the Treaty of Berlin) was that marked upon the sketch by the dotted line, C-D, about half of which belongs to the frontier of the Turkish Empire, and half to that (now a nominal one) of Persia against Russia. This frontier upon its Persian side is largely natural, following the course of the Araxes River, as far as the nearly isolated mountain mass of Ararat, which stands where Persia, Asiatic Turkey, and the Russian Empire meet, but eastward of this mass of Ararat and on to the Black Sea the frontier follows no natural features, it cuts across high ridge and deep ravine indifferently, and may be neglected in any strategic plan. The great features of the district between the Caucasus and Asiatic Turkey, for the purposes of military history, are:—



(1) A depression running from sea to sea, roughly parallel with the Caucasian chain, and (roughly also) at an average of sixty miles or so from its summits. This depression has, of course, its western and its eastern slope, the watershed between which on the Pass of Ssuram (at S) is itself nearly 3,000 feet above the sea. But the railway follows it all and unites along this natural trench Baku, the Oil centre, upon the Caspian, with Batoum, the European port upon the Black Sea, and this railway is connected along the Caspian coast with the systems to the north of the Caucasus. Not quite midway between the two seas is the chief town of Tiflis (T), at the foot of the principal road across the Caucasian Chain, and the nodal point upon which all land communications (rail, road, and sea) for a Caucasian campaign must centre.

From Tiflis southwards runs towards the Turkish frontier and the fortress of Kars (K) a railway which crosses two ridges of fairly high mountains and climbs beyond Kars to its railhead at Sarikamish, 6,000 feet above the sea (Sh). The mountains between the main Caucasian railway—that from Baku to Batoum—and the Armenian frontier, are too complicated to be represented upon this rough sketch, even in their main lines. They appear in the sketch as no more than “a mountainous area.” It is all a tangle of high hills leading up to the Armenian Plateau. But we must conceive of all the land between the railway and the frontier as rising gradually by some 5,000 feet, with summits 10,000 and even 11,000 feet above the sea, and so cut up that travel from one point to another, save along the Kars railway (and even that crosses great heights), nearly always involves the passage of a steep and snow-clad ridge.

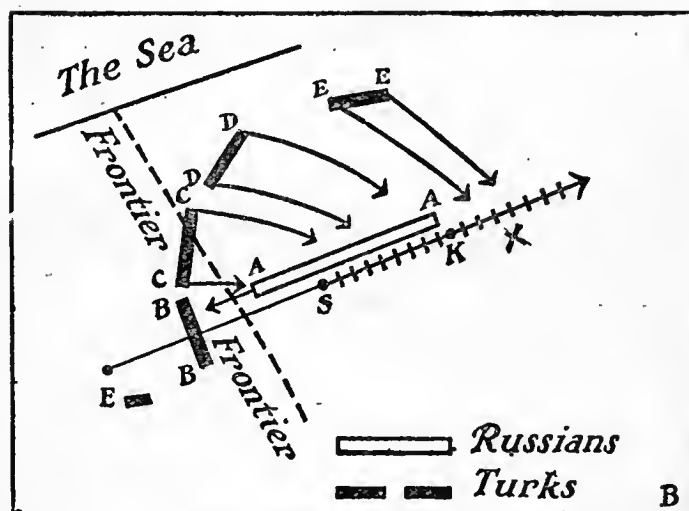
I shall give later a sketch of that tangle on a larger scale. In the direction along which the Kars railway points—that is somewhat south of west—but over the border and some 80 miles further on is, at a height of over 6,000 feet, the town of Erzerum (E), the place of concentration for the Turkish forces in this neighbourhood. Finally, upon the Black Sea at T.R. is the port of Trebizond, the principal Turkish port for this district.

With these main elements before us we can follow upon a somewhat larger scale the details of the recent Russian victory.

The first thing to seize is that the general plan of the Germans upon this front after they had brought Turkey into the war was an envelopment of the Russian army of the Caucasus, or at any rate

of so large a part of it as should destroy the usefulness of the remainder.

There was but one district in which such an envelopment could take place, for there is but one main avenue of approach by which a large force can march from Russian into Turkish territory or from Turkish into Russian, and that is the road from Kars to Erzerum. The Russian army would certainly bring forward the bulk of its forces by that road, which is further supplied with a railway as far as the terminal station of Sarikamish, 15 miles from the frontier. Once this main advance began, and the main Russian force was engaged in the valley in its march upon Erzerum, it was to be held in front by resistance upon the main road, and while it was thus held Turkish forces stationed upon the left or northward of this main road were to sweep round and come upon the right flank of the Russians. There was even one extreme Turkish force still further to the north which was to come round by sea to work round behind the Russians while the general engagement was in progress and to cut the main railway from Tiflis to Kars upon which the Russians depended for their munitions. The whole thing may be put diagrammatically as follows: where K is Kars,



S is Sarikamish, and E is Erzerum. A railway coming from Tiflis and the depots of the Russians in Georgia accompanies the road as far as the railhead at Sarikamish. The Russians are expected to make their main advance upon Erzerum as along the column A-A. The Turks under German direction proceed to envelop this Russian advance by holding it in front with a force B-B, and then moving forces C-C and D-D round against the Russians in the direction of the arrow, while yet another force, E-E, strikes through to cut the railway behind Kars somewhere near X. There was a certain amount of detached work going on away to the south, that is to the left of the Russians and the right of the Turks, but we need not concern ourselves with that, the study of which would only confuse our grasp of the main operations.

What the Turks had here been bidden to carry out was exactly upon the model of all modern German strategy, and that is what makes us certain that the blunder was made under German direction. It may even be regarded as the third of the great failures of this enveloping strategy in the present war. The *first* was Von Kluck's failure to get round the Allied Army in front of Paris; the *second* was Von Hindenburg's failure to get round the Russian line in front of Warsaw;

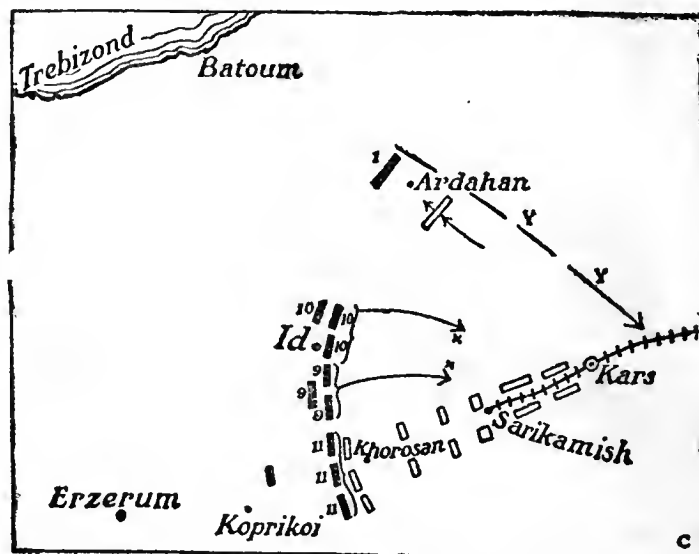
and this Caucasian battle, fought with Turkish soldiers under totally different climatic and topographical conditions, is a *third* failure in exactly the same image.

In order to effect an envelopment of this kind the Germans had to count on a numerical superiority of their ally's troops in this region, for you cannot thus hold in one place and turn in another unless you are numerically superior to your enemy. Nothing could make up for this necessity of superiority in numbers save some great superiority in mobility, which mobility the Turks, lacking any railways in this neighbourhood, obviously did not possess. We may take it, therefore, that the 120,000 men or so (possibly altogether as many as 160,000) which the Turks had to hand were confronted by no more than some 100,000 Russians, or at least expected to be confronted by no more.

A second necessity, lacking which a movement of this sort is bound to fail, is the exact co-ordination of all the movements. If your various bodies converging upon the enemy do not keep in touch and work accurately to a time-table, they are bound to be defeated in detail, for some of them will be in conflict with the whole of the enemy before the rest have come up. The classic example of this sort of failure is the Battle of Tourcoing in 1794.

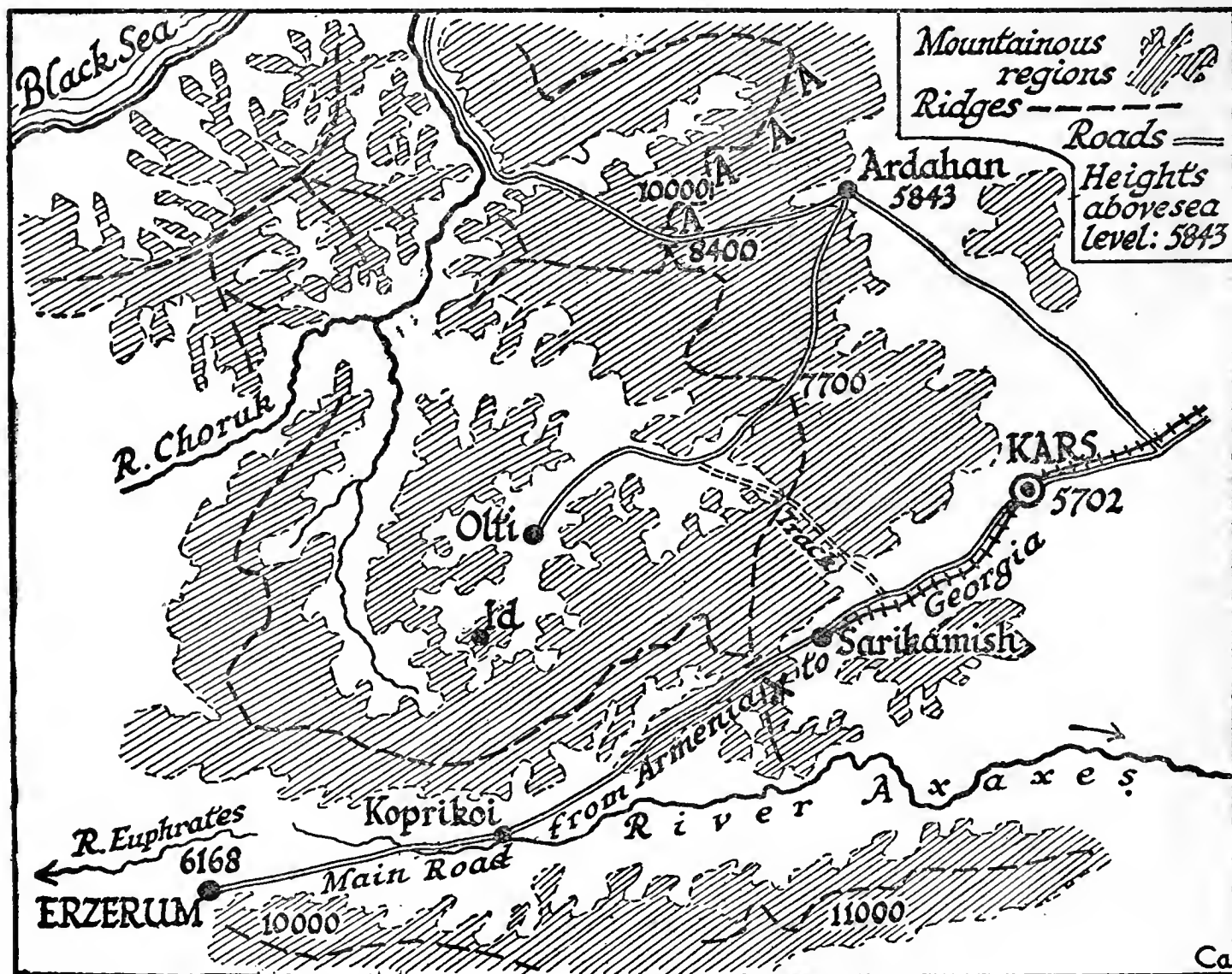
The co-ordination of movements over distances of more than a hundred miles in such a district as this jumble of high mountains between Armenia and Georgia in the depth of winter was impossible, and it is difficult to see how the Germans could have believed it possible. The whole place is a confusion of immense ridges, arranged

on the most complicated pattern, with passes over them often 8,000ft. above the sea, and peaks rising two to three thousand feet higher. The whole place is deep in snow and subject at this season to very heavy storms. Translating the diagram into the actual map and following the movements from day to day this is what happened:—



Towards the end of October there was concentrated at Erzerum a force consisting of three Turkish Army Corps: the 9th, the 10th, and the 11th.

With what rapidity the Turks could assemble their men we do not know, but at any rate the great concentration was taking place about that time, and the corresponding Russian concentration was taking place in the neighbourhood of Kars in those same days. The distance from Kars to Erzerum



as the crow flies is about 115 miles, and by the road over two high passes something like 140 if I am not mistaken. Both centres stand very high; Kars nearly 6,000 feet above the sea, Erzerum over 6,000, while the road between them rises at the pass to as much as close on 8,000; and we must conceive of the whole of this theatre of operations as a tost sea of huge mountains separated by a network of deep ravines, even the lowest floors of which are deep in snow.

The sketch at the foot of the preceding page may give some idea of the extremely difficult country over which some German, working with a map, saw fit to design a converging movement against the Russian columns which were advancing up the Kars-Erzerum road.

In this sketch I have marked the high mountainous land by shading, and the ridges or crests along which all that high mountainous land is grouped I have marked by a series of dashes. Here and there in the mountains are figures showing the height of some crest or of a pass, while the valley floors are left white. It will, I think, be clearly seen from such a sketch how impossibly confused the whole district is. Observe, for instance, how the 1st Turkish Army Corps, coming from the valley of the Choruk River and making for Ardahan, had to cross a high ridge, and had for such a passage nothing but one bad mountain road, with the height of the pass more than 8,000 feet above the sea; from which, upon the further side, was a sharp fall of nearly 3,000 feet on to Ardahan itself. Observe in what a tangle of mountains lies the point of Olti and the neighbouring point of Id; from one of which, Id, the 10th Army Corps started for its ill-fated adventure against the Kars-Sarikamish road, and upon the other of which, Olti, that same Army Corps has withdrawn by something which is no more than a mountain track, after its defeat.

There is, indeed, in all that extraordinary confusion of high peaks and gorges, only one natural avenue for troops, which is the depression leading from Kars up to Sarikamish, a sort of broad floor in the midst of the mountains, the road up which, after the pass at X, comes down on to the valley of the Araxes at Koprikoi, the old "*Ad Confluentes*." It so happens that between the upper waters of the Araxes River and the first sources of the Euphrates, near Erzerum, there is no saddle of high land; and the road passes easily from the Upper Araxes to Erzerum. But, apart from that main line between the two military towns of Erzerum itself, more than 6,000 feet above the sea, and Kars, little more than 400 feet lower, there is the only good marching route of all that land. And the attempt to converge upon Sarikamish from the neighbourhood of Id and Olti, as did the 9th and 10th Turkish Army Corps, was an attempt necessarily doomed to failure.

So was the attempt to bring in a wide sweep an extreme body round by the sea through Ardahan, and so on through to the railway behind Kars. For though, once at Ardahan, such a body had a clear road through open country before it until it reached the railway behind Kars, yet in order to reach Ardahan it had to cross the high ridge, A, A, A, the summits of which touch 10,000 feet, and the saddle over which from the valley of the Choruk was itself over 8,000 feet above the sea.

The reader who follows these campaigns upon the best maps may be curious to note the prolongation of the railway from Kars to Sarikamish, and may have wondered why I spoke of the latter place as the Russian "railhead." None but the most recent maps give this extension. Two years ago the railway stopped at Kars. It is only since 1913 that the extension to Sarikamish at the foot of the high mountains has been opened.

From such a digression upon the details of that impossible country I return to the movement itself.

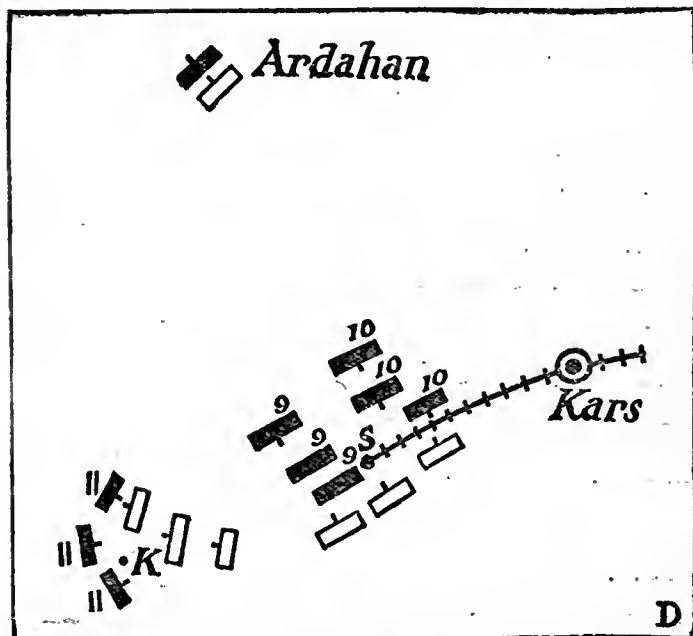
Sundry preliminary actions between the advanced forces of the two armies that were concentrating would have interest in a full history, but would only confuse the main lines of this summary. We therefore proceed at once to the main advance, which did not develop until the last ten days of November. It was on November 20th that the Russians had reached their furthest point in their march upon Erzerum, driving the Turks from Koprikoi. We shall do well if we conceive of this Russian success as being rather due to a deliberate retirement upon the part of the Turks than anything else, because immediately after the action at Koprikoi the Turkish counter-advance began. It was pursued slowly and successfully during the month of December, and took the following form:

The 11th Corps marched towards Khorosan, which is just over the Turkish frontier and about thirty miles from the Russian railhead at Sarikamish. There was heavy fighting in Christmas week, and two days after Christmas the Turkish 11th Army Corps had reached the outskirts of Khorosan itself, which the Russians were defending. I have marked their position at this moment with the figures 11, 11, 11. Meanwhile, concentrated round the frontier post of Id forty miles to the north was the 10th Turkish Army Corps, which I have similarly marked with the figure 10, and between it and the 11th, that is, between Id and Khorosan, was the 9th Turkish Army Corps, which I have marked with the figure 9. The Russians were well held in front of Khorosan, and their main forces stretching back along the valley towards Sarikamish and so to the rail and road to Kars were to be attacked by the 10th and the 9th Army Corps sweeping round in the direction of the arrows, X-X. Meanwhile, far to the northward, yet another Turkish force having been brought round by C, and consisting partly of troops from Constantinople, that is from the 1st Army Corps, were advancing to take Ardahan, and having taken it to go on along the direction of the arrow, Y-Y, and to cut the railway behind the Russians a little below Kars.

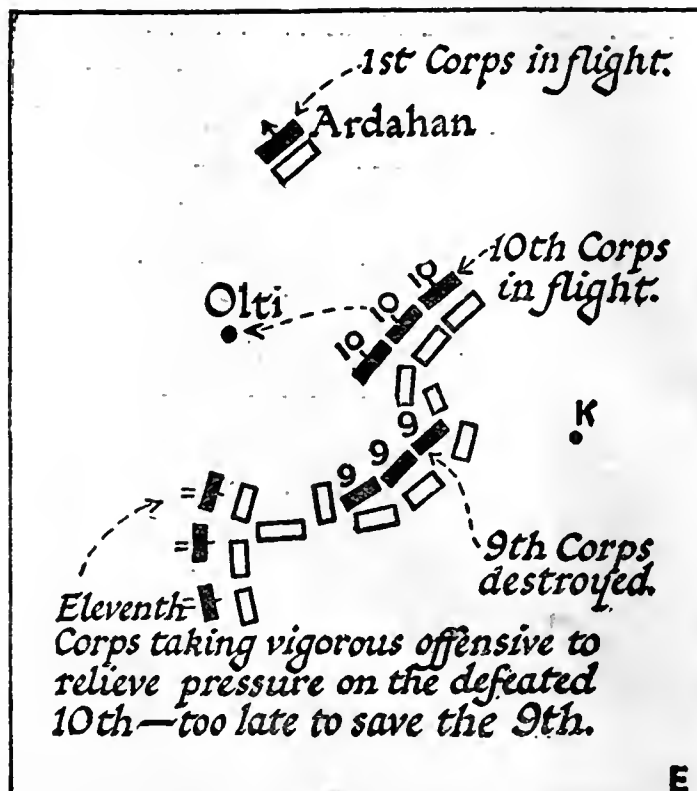
While we speak thus upon the sketch-map of "advancing in the direction of the arrows," we must constantly remember that this meant in practice the crossing of high mountain ridges in the blizzards of mid-winter, and at the same time keeping all the movements exactly co-ordinated. The first of the failures was that of the body, I, in front of Ardahan. The Turks here did manage to take the town. They had to fight for more than a fortnight to get it, but they were in possession upon New Year's Day. Hardly had they established themselves there, however, when a Russian force coming up just in time broke them two days later;

upon January 3rd, drove them out of the town, and checked the Turkish advance on this extreme left for good and all.

In those same days when the sweeping movement round by Ardahan was held up, that is, the days at the end of last year and at the beginning of this year, the main Turkish advance on the Erzerum-Kars road, and round upon the flanks of it was being pressed. The 11th Turkish Army Corps held the Russians firmly at Khorosan; the 9th and the 10th were successfully struggling across the mountain ridges and appeared upon the heights above Sarikamish about Christmas Day. They had been so far successful as to very nearly achieve their object; they had very nearly enveloped the Russians, and the position in the last week of the year may be grasped from the accompanying map.



The 11th Turkish Army Corps holds the Russians at Khorosan; the 9th Turkish Army Corps is first above and then in Sarikamish itself; the 10th Turkish Army Corps to the left of the 9th is coming down upon the valley and the railway between Sarikamish and Kars. For three days, Boxing Day and the two days following, there was a violent struggle between the Turks and the Russians of which Sarikamish was the centre. The 9th Turkish Army Corps was holding Sarikamish, the 10th was fighting for the railway beyond, apparently; whether it managed to reach it or not we have not been told. It seems to have been towards the end of the day December 29th that the struggle began to turn in favour of the Russians, and New Year's Day and the day following must have seen the pushing back of the 10th Army Corps—for nothing else will account for what came immediately after, the isolation of the 9th. The position January 2nd would seem to have been much as on the following sketch. At any rate, on Sunday, January 3rd, the same day which saw the victorious entry of the Russians into Ardahan; and the decisive check administered to the 1st Turkish Army Corps there, the 9th Corps still holding desperately to its position in the valley at Sarikamish found itself isolated by the defeat of the 10th Corps upon its left and was wiped out. The 11th Army Corps up by Khorosan could do nothing. It had held up the head of the first Russian advance, but it could not go further—it had not moved since two days after Christmas. The 9th Turkish Army Corps was therefore left en-



tirely to itself as the 10th broke away northward and the result was that this 9th Corps lost, killed, wounded, or captured, the whole of its effectives; all its staff including the German officers present are prisoners on their way to the interior. All the artillery of the Corps has been taken and, in a word, the Turkish centre has ceased to exist.

But the action has continued none the less during the week that has passed since that date, while the Russians continued their pursuit of the retreating 10th Corps, using, for that purpose it may be presumed, all the troops they originally had against the 10th Corps, and reinforcements from those who had just wiped out the 9th Corps. The 11th Turkish Corps began taking a vigorous offensive in order to relieve the pressure upon the retreating 10th. The 11th Corps pushed up beyond Khorosan in what must have been a very vigorous offensive, to within a long day's march of Sarikamish, and the position at the end of this effort was much as it is upon the next sketch: With Sarikamish at S, the Turkish 11th Corps is hitting hard at A (Karai Urgan, eighteen miles from Sarikamish) and trying by so doing to bring the Russians back from their pursuit of the 10th Corps. Whether that 10th Corps will in the main get away or not only the future will show, but the total result of the operations is to leave the Turks upon this front in a position of marked inferiority as against the Russians and to put an end for the moment to any anxiety the Russians might have had for the safety of their Caucasian provinces; of their oil wells at Baku, of their frontier stronghold at Kars, of the integrity of their main force in this region, and of their railways and communications.

We must not exaggerate the magnitude of the event. The forces engaged were but a fraction of the total numbers that Turkey can put into the field, and the defeat though complete leaves two-thirds of the Turkish forces round Erzerum in being. Whether a new offensive will be attempted upon this same front by the Turks we cannot tell, but we can be certain that much time must elapse before it could develop in any strength. There are considerable forces in European Turkey from



which to draw, but the railway could not take them more than a couple of hundred miles towards this front; there would still remain nearly two months of marching by mountain tracks before Erzerum would be reached, and if, in the interval, the Russians account for the remaining 10th and 11th Corps it is fairly certain that new Turkish Armies will not be sent north-eastward at all. Were transport by sea secure such reinforcements might reach the port of Trebizond and the region of Erzerum in a few days, but transport by sea is contested and though it has been effected recently along that coast quite insecure, as we know by the fate of the two transports sunk by Russian fire. Upon the whole it would seem as though the effect of Sarikamishi was decisive, so far as this theatre of the war is concerned.

THE POLISH FIELD.

In the Polish field there is an absence of anything decisive during the whole of the week, and even of any minor action with any definable result. In Galicia and in Bukovina the Russians are in the mouths of the passes and have not yet proceeded to control the summits, or even to advance towards such control. The reason probably is that the weather has made transport for an advancing force impossible. Clear weather, however cold, would see the beginning of another forward movement. And here it may be worth while commenting upon the perfectly meaningless phrase which has twice escaped the German General Staff, and which has been repeated by their apologists in the United States: I mean the phrase that "the Russian offensive is broken." That phrase is not meaningless in itself, it is only meaningless in the circumstances to which it is applied. There is a perfectly simple meaning to the expression "the breaking of an offensive": it means that your enemy having attempted an offensive movement has failed in it, not only for the moment, but so finally and thoroughly that he will never be able to begin again. A Russian who felt inclined to prophesy might be inclined to say that the Austro-German offensive movement against the line of the middle Vistula and the San was thus

"broken." It would be a foolish prophecy, because so long as there is a great army capable of threatening your own in front of you, and so long as it has ample reserves of men, it may always return to the attack. But, still, the Austro-German effort has been a very clear case of a vigorous offensive breaking down at the end of its first stage.

On the Russian side there has been nothing of the sort. There has been a deliberate retirement before the German advance, the taking up of a defensive line, and the maintenance thereof. The retirement followed no surprise or lost general action: it was a calculated retirement based upon difficulty of supply under the climatic and topographical conditions of Russian Poland. So far from being the end of the Russian offensive, it is quite manifestly the preparation for the Russian offensive, to which only the accumulation of supply, a matter of the weather, and the time is lacking. Whether such a new offensive will succeed or not is quite another matter; but that it is not only possible, but in the very strategical nature of things in the Eastern field, is self-evident.

Meanwhile the last phase of the German attempt to break through to Warsaw consists in something singularly like what happened in Northern France from three to two months ago. Upon a comparatively narrow, selected front a very violent attack is delivered. The terminal points of this front, the hamlet of Sukha and the farmsteads called Mogeles are about a day's march apart, and stand upon the Bzura much where the first violent attack upon Warsaw was made a month ago. Upon that restricted area the enemy massed in particularly dense formations, and depending exactly as he did in the West upon a lavish and concentrated display of heavy artillery, is directing all the weight of his effort; precisely what he did first on the twelve-mile front between Dixmude and the sea, later upon successive narrow fronts round Ypres. Hitherto the result has also been the same.

THE WESTERN FIELD. THE ATTACK ON MULHOUSE.

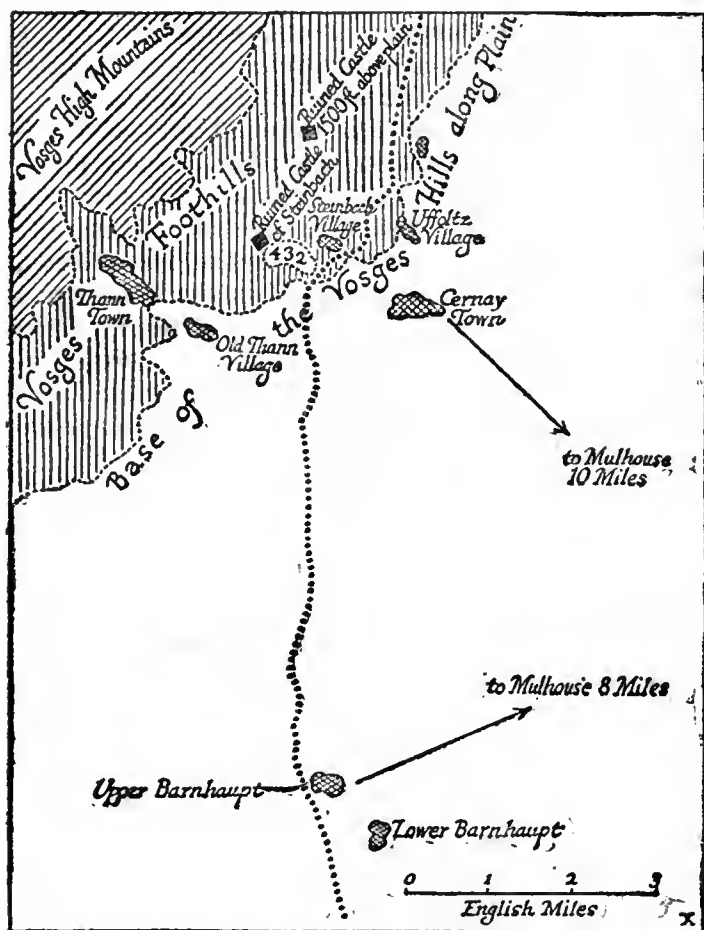
The French offensive against Mulhouse was much more likely, as was said in these columns last week, to bring down German reinforcements into Upper Alsace than to achieve its immediate object of reaching the Rhine, although that frontier of Germany proper, which would thus have been uncovered, is only sixteen miles away from the advanced French positions.

But, as was also said in the same place, the bringing of German reinforcements down from the north to stand against this pressure on Mulhouse is an end in itself, though less serious than the approach to the Rhine.

We must always remember that the great asset the French have is their superiority in gunnery; not only in the mechanical superiority of their field guns, but in the superiority of their training, rapidity, and genius for gunnery. Their great weakness on this side at the beginning of the war was an insufficiency of heavy artillery, and that weakness has now been made right.

Consequently, wherever the French are exercising pressure upon the long line of trenches, their gunnery must be met as best can be by German reinforcements in the same arm. The heavy re-

inforcements in infantry alone that Germany has required to meet this novel pressure upon Upper Alsace must come from somewhere: the whole point of exercising such pressure is to "stretch" and thin the line somewhere else. But whereas infantry of sorts can be improvised, gunners cannot. By which I mean that the heaviest part of the advantage acquired by the French in thus exercising pressure upon the extreme of their line is not that it brings great masses of German infantry there—though that is not to be despised: it is especially that it compels the enemy to denude some part of his line of its proper complement of guns. And you will find that the moment heavy German reinforcements are needed at some point where pressure of this kind has been applied, the second step immediately taken is for the French to search the line up and down to find where a weakness in guns may be discovered. It takes a day or two to move such guns: they may often come from reserves of material. But it only takes a few hours to move the gunners, and the gunners, moved from one part of the line, at once weaken that part of the line. How the novel pressure upon Upper Alsace has worked the last few days may be gathered from the accompanying sketch.



There has been a double effort upon Mulhouse since the village of Steinbach was captured, now nearly a fortnight ago. There has been an effort from the north by a French offensive in front of Steinbach itself, which effort has been met by strong German reinforcements there; and there has been an effort about six miles away to the south, near the two Burnhaupt, where the Germans have also brought up considerable reinforcements to check this second movement.

The first is about ten miles from Mulhouse, or, counting right up to the French front, about 11-11½. The second is no more than eight. On the northern part of this double effort the German defensive, though still maintained, is maintained

under most expensive conditions. The French hold all the gun positions on the foothills, and they hold, of course, the dominating heights just above. For instance, above Wattwiller they hold the height more than a thousand feet above the plain upon which stands the ruined castle of Herrenfluh; while above the famous gun position upon "Hill 432" (which means a point marked in the Ordnance Survey as being 432 metres above the sea, or about 1,400 feet above the plain) they hold the height which supports the ruins of the castle of Steinbach, also somewhat more than a thousand feet above the plain.

Against their positions reaching down from the first of these ruined castles the enemy have made very determined, but as yet unsuccessful, attempts to carry the slopes from the plain village of Wattwiller. They have maintained themselves in Uffoltz, which is divided between the hill slope and the plain; they have not succeeded in re-taking the site of Steinbach village; they have failed to carry and re-capture Hill 432, and in general they have here established a check to the French advance, but have failed to throw it back.

In the southern sector they have been more successful. The French for a moment captured Upper Burnhaupt, they were driven out of it again by heavy German reinforcements five days ago, and at present their line is roughly that of the dots across the above sketch map.

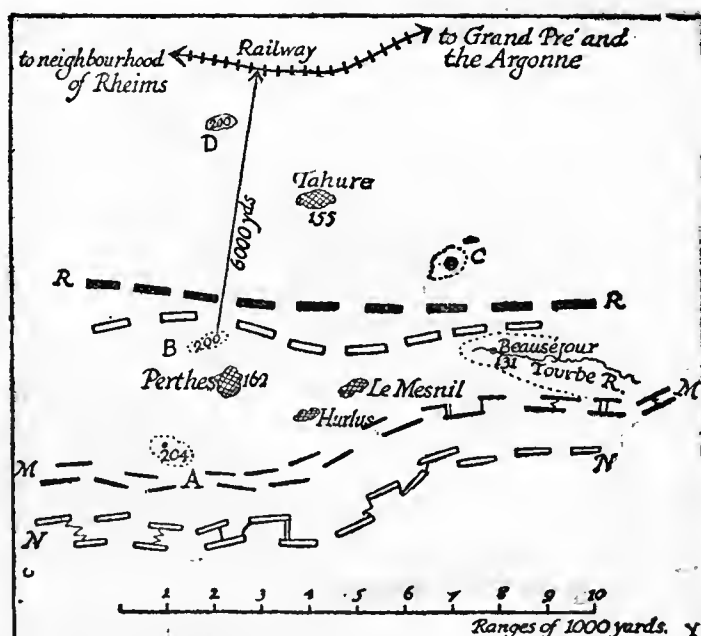
Our principal interest in this affair so far has been in the estimate of the German reinforcements required to stem the threat of the French offensive in Upper Alsace. We have some indication of this in the estimate of German losses during the recapture of Upper Burnhaupt alone. These losses amounted to about 4,000, of which one-half represented unwounded prisoners; and that, of course, must have been during the initial stage of the fighting, because, as it was the French who retired, they would have taken no prisoners, either wounded or unwounded, in the last stages of this local action. We may therefore estimate at a Division the reserve called down from the north to protect the advance upon Mulhouse from the south alone; and one is perhaps safe in estimating at nearly the same strength the forces protecting Mulhouse from the northern advance. What the French forces opposed are we do not know, but presumably superior in number of guns at least, and probably in men as well, for it is they who have been able to take the offensive.

But the pressure all along this front is not confined to the direct threat upon Mulhouse. There are forces operating in front of Colmar to the north and against Alstricht to the south; and it is the most probable development of the situation that the pressure, and the bringing up of men to withstand that pressure, will increase continually all down the line of the Vosges as spring approaches. It is much the best game for the French to play, and the Germans know it. It thins the rest of the line somewhere to within danger of breaking point. It has some political value, and its high political-military value lies in the fact that here only is the frontier of Germany proper immediately exposed to the French offensive. It is within sight from the hills. Everywhere else the limits of the German Empire, as distinguished from annexed and disaffected territory like Alsace-Lorraine, or territory merely occupied like Bel-

THE SUCCESS NEAR PERTHES.

And here, again, we can use the highly detailed local fighting as an illustration of what the present trench work means. Immediately in front of Perthes, itself 162 metres above the sea, the ground swells in a sort of gradual lump to a rounded summit, 200 metres above the sea, or thereabouts—that is, about 120 feet higher than Perthes village. All this country is a confused, bare, rolling land of damp chalk and clay, and Perthes is almost at the highest of its monotonous lift. It is from this region that the little muddy streams, thick, white like milk in rainy weather, ooze from the ungrateful soil of the Champagne Pouilleuse. The Suippe rises not far off, and the Tourbe, near the farm of Beauséjour, about three miles only from Perthes. What the French have done is to seize the fortified height above Perthes village, which is marked B upon the accompanying sketch; and the importance of their action lies in its representing a further advance towards the railway lying behind the German trenches and supplying the forces that line them with munitions and food.

If you had made a sketch of the French and German opposed trenches about a month ago in this region, you would probably have had something like the lines M M for the Germans, N N for the French. If you were to make a similar sketch to-day, you would have something like the line R R for the Germans and S S for the French. And though the advance does not represent more than 3,000 yards at the very best from the extreme



I have seen somewhere the remark that the capture of the point B or the Hill 200, in front of Perthes, gave the French gunners a dominating position commanding this railway.

This is an error. The whole of that ugly naked landscape is far too confused to obtain a good gun position, and there are four lumps of much the same height in the same neighbourhood, which I have marked A, B, C and D on the sketch, while the shallow valleys between the swells of ground are not much over 100-150 feet deep. Moreover, artillery by indirect fire can, when it is in range, destroy such a work as a railway with precision by mere measurement upon a map. It does not need to dominate from a height. What an advance like this does is to give the guns operating against such an objective a shorter range over which to work. If, for instance, the French should reach the village of Tahure, more than half-way between Perthes and the railway, then the French, advancing their heavy guns behind their line, could make the railway perfectly unusable. As the trenches now lie it may be doubted whether they have yet quite achieved this object. The whole meaning of their push forward here in the middle of Champagne is the approach towards the railway, and their foremost troops are now just under four miles from that line of communication and supply.

THE POLITICAL EMBARRASSMENT OF THE ENEMY'S STRATEGY.

That is, we may expect, if things continue upon the same lines, that the enemy will suffer during the next few months in the following fashion:—

This point is so important that it is essential we should make it, even though it seem a little premature; we shall almost certainly find it dominating the future of the war; and at the outset of such an inquiry the reader may well be perplexed by the use of that word "political."

We perpetually read in military history that such and such a general "had designed an excellent plan of campaign, but it was marred by political

considerations." Now this phrase seems ambiguous. For it is evident that every campaign must, in the wider sense of the term political, be dominated by political considerations. A nation does not go to war save for certain political ends. Its warfare is dictated by its foreign policy. It desires to achieve certain political gains, or to prevent certain political losses. Save for such a desire warfare would have no object and no meaning. Thus, Austria threatened Servia with the political object of extending her influence—and particularly the influence of Hungary—in the Balkans. Germany took advantage of that situation to force war upon Russia and France with the political objects of ridding herself of Slav pressure from the East, of making herself secure over her Polish subjects, of putting an end for ever to the French menace from the West, and probably of acquiring a seaboard in the Low Countries whence she could challenge the maritime supremacy of Great Britain. All wars are political in their inception; all have a political motive behind them, and the strategy of all is destined to achieve some political end.

How, then, can we talk of political considerations as "embarrassing" or "confusing" strategical plans? When military history speaks in those terms it is using the word "political" in a special sense, and what is meant is that, during the course of a campaign, certain subsidiary political ends, far less in importance than the total defeat of the enemy, come in to hamper a general and prevent his pursuing the immediate military object which he should alone pursue, the weakening and ultimate destruction of his opponent's armed forces.

For instance, when the Germans invaded France in the overwhelming force of, say, 16 to 10 last August, they calculated on the "political lure" of Paris as something certain to divert the French generals from their plain military task of maintaining their armies intact until, if it were possible, they could hold and check the enemy. It was obviously the business of the French generals to prevent by any means in their power the annihilation as an offensive weapon of the numerically inferior forces they commanded, and in pursuit of that plain object it was the duty of the French generals to neglect all secondary considerations, such as the safety of a particular town or district. The one thing they had to remember was that the armies must be kept in being, and that the invader must be held, and later defeated, in spite of his overwhelming numerical superiority.

But the German General Staff calculated that the threat of material destruction in Paris, and even of an occupation of the French capital, would be of such effect that the French generals, rather than risk this destruction or occupation, would compromise the whole campaign. They calculated that the advance on Paris, and especially the immediate approach to the capital, would either confuse the French general strategical plan or would so change that plan as to make its new object not the holding of the enemy and his ultimate defeat, but merely the immediate salvation of the area of Paris.

By a curious irony the war has so developed that no one of the Allies, but rather the Austrians and the Germans, now suffer from this embarrassment, and that the strategy of the Austro-German forces, which should be directed to the single end

of defeating the Allies in the field, is already hampered, and will, presumably in the near future, be much more gravely hampered by considerations not purely military, but, in the secondary sense of that word, political; and it is this political embarrassment which I propose to analyse in what follows. It will prove essential to our comprehension of the further phases of this war.

The political embarrassment of which I speak, and which is already entering into and disturbing the plans of the enemy, is two-fold.

First: There are the political considerations which tend to disruption within the Germanic body by the threat of Hungarian disaffection and of Austrian defection.

Secondly: There are the political considerations affecting Germany alone, her desire to hold on to Belgium, not for a military but for a political reason; her desire to hold on to Alsace-Lorraine, not for a military, but for a political reason; her desire to hold on to East Prussia, not for a military, but for a political reason; her desire to hold on to Silesia, not for a military, but for a political reason.

It will be noted when we come to examine the matter in the form of a diagram, first, that the danger, certainly of Hungarian, possibly of Austro-Hungarian secession from Germany, is, from considerations of geographical position alone, increasingly strong. Secondly, that the German Empire cannot equally defend the four extreme and separate areas—Belgium, Alsace-Lorraine, East Prussia, and Silesia—to which its political attachment is now fixed, but will have to choose between them, since these areas are four *widely separated* outliers of the whole territory wherein the German effort at defence is now being played.

IN WHAT THE POLITICAL EMBARRASSMENT TO THE ENEMY'S STRATEGY CONSISTS.

I.—GENERAL.

I would first ask the reader to grasp the following four simple diagrams.

I shall, for the purposes of elucidating this argument, which is at once of a novel and, I think, important character in understanding the future of the campaign, repeat the two principal of these diagrams later in the article. But I put them at the head of my argument in order to make my principal point clear before I elaborate it.

Here are two oblongs, A (left blank) and B

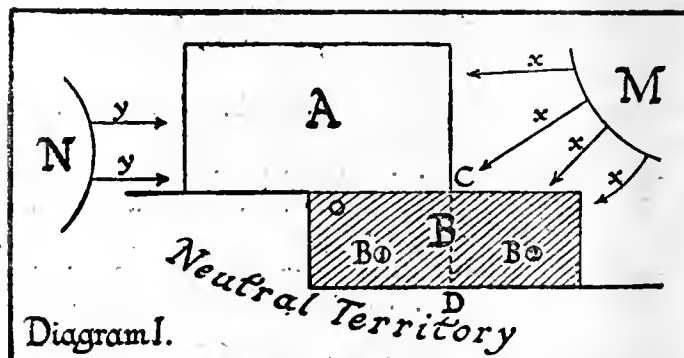


Diagram I.

(lightly shaded). Supposing these two oblongs combined to represent the area of two countries which are in alliance, and which are further so situated that B is the weaker power to the Alliance both (1) in his military strength and (2) in his tenacity of

purpose. Next grant that B is divided by the dotted line C-D into two halves. B not being one homogeneous State, but two States, B-1 and B-2.

Next let it be granted that while B-1 is more likely to remain attached in its alliance to A, B-2 is more separate from the Alliance in moral tendency, and is also materially the weaker half of B. Finally, let the whole group A-B be subject to the attack of enemies from the right and from the left, from the right along the arrows X-X-X, and from the left along the arrows Y-Y by two groups of enemies represented by the areas M and N respectively.

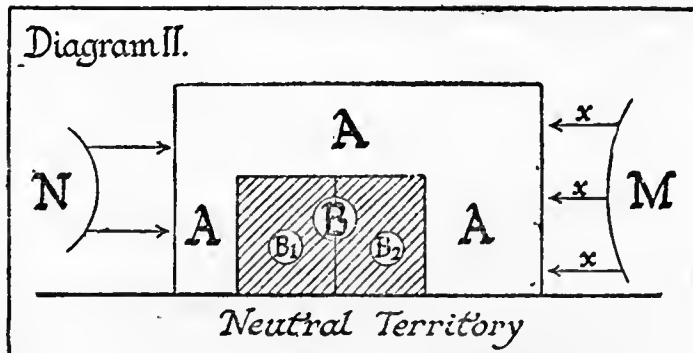
It is obvious that in such a situation, if A is the chief object of attack, and is the power which has both provoked the conflict and made itself the chief object of assault by M and N, A is by this arrangement in a position *politically weak*.

That is, the strategical position of A is gravely embarrassed by the way in which his Ally B separated into the two halves B-1 and B-2 stands with regard to himself. B-2 is isolated and thrust outward. The enemy M upon the right, attacking along the lines X-X-X, may be able to give B-2 a very bad time before he gets into the area of B-1 and long before he gets into the area of the stronger power A. It is open to M so to harass B-2 that B-2 is prepared to break with B-1 and give up the war; or, if the bond between B-2 and B-1 is strong enough, to persuade B-1 to give up the struggle at the same time that he does. And if B-2 is thus harassed to the breaking point, the whole Alliance A plus B will lose the men and materials and wealth represented by B-2, and may lose the whole shaded area B, leaving A to support singly for the future the combined attacks of M and N along the lines of attack X-X-X and Y-Y.

Now, that diagram accurately represents the political embarrassment in strategy of the German-Austro-Hungarian Alliance. B-1 is Austria and Bohemia; B-2 is Hungary; A is the German Empire; M is the Russians; N is the Allies in the West. With a geographical arrangement such as that of the Germanic Alliance, a comparatively small proportion of the Russian forces detached to harry the Hungarian Plain can make the Hungarians, who have little moral attachment to the Austrians, and none whatever to the Germans, abandon the struggle to save themselves; while it is possible that this outlier being thus detached will drag with it its fellow half, the Austrian half of the dual monarchy, cause the Government of the dual monarchy to sue for peace, and leave the German Empire isolated to support the undivided attention of the Russians from the East and of the French from the West.

It is clear that if a strong Power, A, allied with and dependent for large resources in men upon a weaker Power, B, is attacked from the left and from the right, the ideal arrangement for the strong Power, A, would be something in the nature of the following diagram, where the weaker Power stands protected in the territory of the stronger Power, and where of the two halves of the weaker Power, B-2, the less certain half, is especially protected from attack.

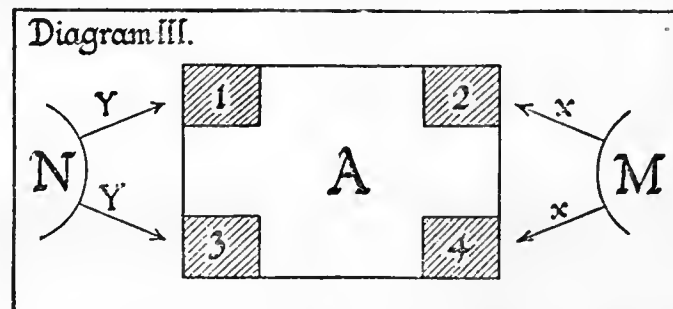
Were Switzerland, Alsace-Lorraine, and the Rhine land upon the one hand, the Hungarian Plain, Russian Poland, and East Prussia upon the other hand, united in one strong, patriotic, homo-



geneous German-speaking group with the Government of Berlin and the Baltic Plain, and were Bavaria, Switzerland, the Tyrol, Bohemia to constitute the weaker and less certain ally, while the least certain half of that uncertain ally lay in Eastern Bohemia and in what is now Lower Austria, well defended from attack upon the East, the conditions would be exactly reversed, and the Austro-German Alliance would be geographically and politically of the stronger sort. As it is, the combined accidents of geography and political circumstance make it peculiarly vulnerable.

And that is my first point.

My second point concerns the German Empire alone.



Let us suppose a Power concerned to defend itself against invasion and situated between two groups of enemies, from the left and from the right. We will again call that Power A, the enemy upon the right M, and the enemy upon the left N, the first attacking along the lines X-X, and the second along the lines Y-Y.

Let us suppose that A has *political* reasons for particularly desiring to save from invasion four districts, the importance of which I have indicated on the above diagram by shading, and which I have numbered 1, 2, 3, and 4.

Let us suppose that those four districts happen to lie at the four exposed corners of the area which A has to defend. The Government of A knows it to be essential to success in the war that his territory should not be invaded. Or, at least, if it is invaded it must not, under peril of collapse, be invaded in the shaded areas.

It is apparent, upon the very face of such a diagram, that with the all-important shaded areas situated in the corners of his quadrilateral, A is heavily embarrassed. He must disperse his forces in order to protect all four. If wastage of men compels him to shorten his line on the right against M, he will be immediately anxious as to whether he can dare sacrifice 4 to save 2, or whether he should run the dreadful risk of sacrificing 2 to save 4.

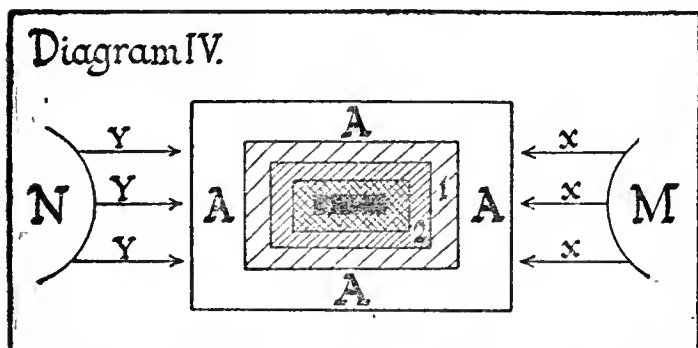
If wastage compels him to shorten his defensive line upon the left, he is in a similar quandary between 1 and 3.

The whole situation is one in which he is quite certain that a defensive war, long before he is

pushed to extremities, will compel him to "scrap" one of the four corners, yet each one is for some *political* reason especially dear to him, and even perhaps necessary to him. Each he desires with alternating anxieties and indecisions to preserve at all costs from invasion, yet he cannot, as he is forced upon the defensive, preserve all four.

Here, again, the ideal situation for him would be to possess against the invader an arrangement in which, if he is compelled to consider four special zones of territory more important than the mass of his territory, he would have the advantage of knowing that they were clearly distinguishable into less and more important, and the further advantage of knowing that the more important the territory was the more central it was, and the better protected against invasion.

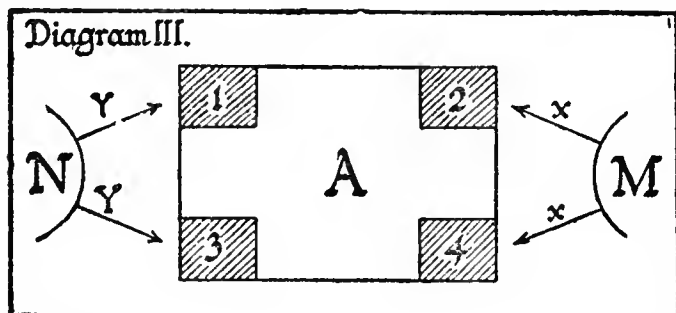
Thus, in this last and fourth diagram the



government of the general oblong, A-A-A-A, distinguished four special zones, the protection of which from invasion is important, but which vary in the degree of their importance; the least important is the outermost, lightly shaded (1); more important is an inner one (2); still more important is (3), and most important of all is the black core of the whole.

Some such arrangement has been the salvation of France time and time again, notably in the Spanish wars, and in the wars of Louis XIV., and in the wars of the Revolution. To some extent you have seen the same thing in the present war.

To save Paris was exceedingly important, next came the zone outside Paris, and so on up to the frontier. But with the modern German Empire it is exactly the other way, and the situation is that which we find in Diagram 3, which I here repeat



The four *external* corners are the essentials which must be preserved from invasion, and if any one of them goes, the whole political situation is at once in grave peril.

The strategical position of modern Germany is embarrassed, because each of these four corners must be saved by the armies. 1 is Belgium; 2 is East Prussia; 3 is Alsace-Lorraine; 4 is Silesia; and the German commanders, as well as the German Government, must remain to the last

moment in grave indecision as to which of the four can best be spared when invasion threatens, or, as is more probable, must disperse their forces in the attempt to hold all four at once. It is a situation which has but rarely occurred before in the history of war, and which has always proved disastrous.

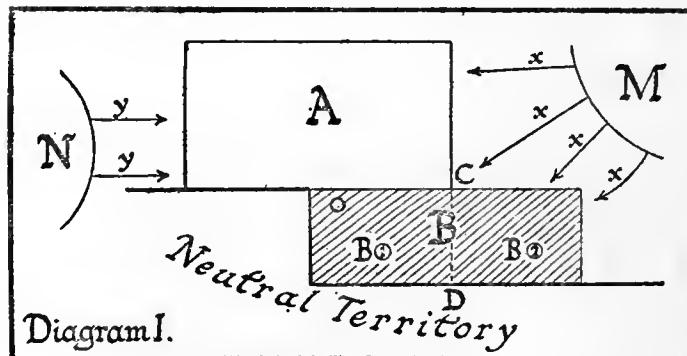
I sum up, then, and I say that geographical considerations must, if the campaign proceeds upon the same lines as it has hitherto followed—the Germans defending themselves in company with a not too confident pair of Allies against their enemies to the East and the West—heavily embarrass the strategy of the enemy because they *first* tend to detach those uncertain Allies; *secondly*, leave the German Empire itself in confusion between the necessity of sacrificing sooner or later one of four quite separate, apparently equally important, and all of them outlying corners of the area now occupied by the German armies.

Such is the general proposition, the details of which I will examine and, I hope, prove.

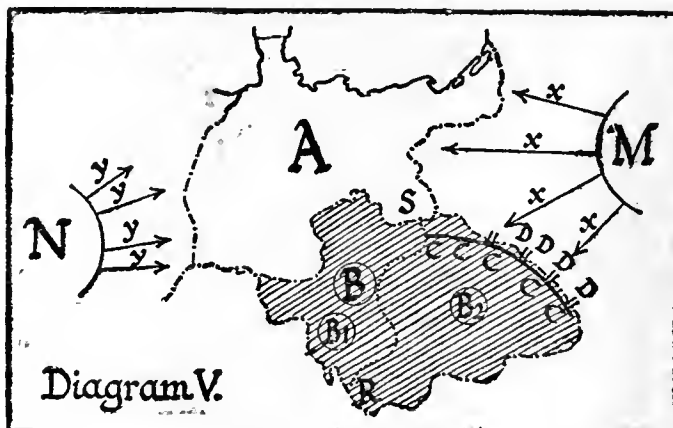
II.—PARTICULAR.

1. *The political embarrassment due to the geographical position of Austria-Hungary.*

We have already considered in a diagram the way in which the geographical disposition of Austria-Hungary weakens Germany in the face of the Allies. For the sake of clearness, let us repeat that diagram here.



Translated into terms of actual political geography, these two oblongs, with their separate parts, are, as a fact, as follows; where A is the German Empire; the shaded portion B is the un-



certain ally, Austria-Hungary, so far as that portion is now free from Russian armies, and this last divided by the frontier, R-S into B-1, the more certain Austrian part, and B-2, the less certain Hungarian part, the latter of which is only protected from assault by the Carpathian range of mountains C-C-C-C, with its passes at D-D-D. M, the enemy on the right, Russia, is attacking the Alliance A-B along X-X-X, while the enemy on

the left, N, France and her allies, is attacking along the lines Y-Y-Y.

Hungary, B-2, is not only geographically an outlier, but politically is the weakest link in the chain of the Austro-Germanic Alliance. The area of Hungary is almost denuded of men, for most of these have been called up to defend Germany, A, and in particular to prevent the invasion of Germany's territory in Silesia at S. The one defence Hungary has against being raided and persuaded to an already tempting peace is the barrier of the Carpathian Mountains C-C-C. The mouth of every pass across these is now in the hands of the Russians, and when, or if the summits shall be again in their possession, and the Russian cavalry reappear upon the Hungarian side of the hills, the first great political embarrassment of the enemy will have begun—I mean the first great political embarrassment to his strategy.

1. Shall he try to defend those passes (which are already nearly forced) in permanent fashion? Then he must detach men and detach them very far from the areas which are vital to the core of the alliance, that is, to the German Empire, A.

2. Shall he send back Hungarian troops to defend Hungary? Then he weakens what is vital to him, the strength of the effectives which still keep the Russians out of Silesia at S.

3. Shall he abandon Hungary? And let the Russians do what they will with the passes over the Carpathians and raid the Hungarian Plain at large? Then he loses a grave proportion of his next year's wheat, much of his dwindling horse supply; his almost strangled sources of petrol; he tempts Roumania to come in (for a great sweep of Eastern Hungary is nationally Roumanian), and he loses the control in men and financial resources of one half of his Allies if the danger and the distress persuade Hungary to stand out. For the Hungarians have no quarrel except from their desire to dominate the Southern Slavs; to fight Austria's battles means very little to them, and to fight Germany's battles means nothing at all.

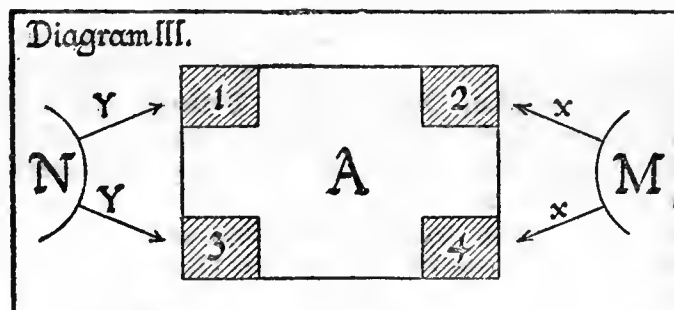
There is, of course, much more than this. If Hungary dropped out could Austria remain? Would not the Government at Vienna rather than lose the Dual Monarchy follow Hungary's lead? In that case the Germanic Alliance would lose at one stroke 11-25ths of its men. It would lose more than half of its reserves of men, for the Austrian reserve is, paradoxically enough, larger than the German reserve, though not such good material.

Admire how, in every way, this geographical and political problem of Hungary confuses the strategical plan of the German General Staff. They cannot here act upon pure strategics. They *cannot* treat the area of operations like a chessboard and consider the unique object of inflicting a military defeat upon the Russians. Their inability to do so proceeds from the fact that this great, awkward salient, Hungarian territory, is not politically subject to Berlin, is not in spiritual union with Berlin; has been denuded of men to save Berlin, and is the most exposed of all the enemy's territory to attack. And every day the problem re-presents itself to the great General Staff of the Prussians: "How can we save Hungary without hopelessly weakening our eastern line? If we abandon Hungary, how are we to maintain our effectives?"

Such, in detail, is the political embarrassment to German strategy produced by the geographical situation, and the political traditions of Hungary itself, and of Hungary's connection with the Hapsburgs at Vienna. Let us now turn to the even more important embarrassment caused to German strategy by the corner positions of the four essential areas of territory occupied by Germany at this moment.

2. *The political embarrassment due to the geographical position of the four essential areas occupied by the German armies.*

We saw in the first part of this analysis and followed upon a diagram, which I here reproduce,

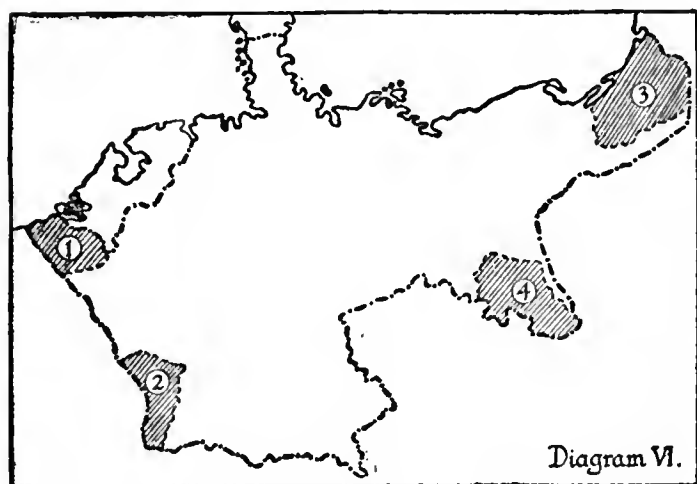


a peculiar political weakness in the German strategical position to-day, which consists in the fact that the four areas which the German Government must for diverse reasons particularly preserve from invasion are (1) widely separated each from its neighbour; (2) standing at the outlying corners of the territory occupied by the German Armies. This point is of the gravest possible moment, and has perhaps not received all the attention it deserves. Of the four outlying points in such a diagram, No. 1 stands for Belgium, as we have seen above, No. 2 for East Prussia, No. 3 for Alsace-Lorraine, No. 4 for Silesia. *And it is the distinctive mark of this most strange situation and the most embarrassing of all, that each area must be preserved from invasion for a different and yet equally important reason.*

Germany must hold on to Belgium, or it is all up with her; she must hold on to East Prussia, or it is all up with her; she must hold on to Alsace-Lorraine, or it is all up with her; and she must hold on to Silesia, or it is all up with her. If there were some common strategical factor binding these four areas together so that the defence of one should be connected with the defence of all, the difficulties thus imposed upon German strategy would be greatly lessened. Though even then the mere having to defend four outlying corners instead of a centre would involve confusion and embarrassment the moment numerical inferiority had appeared upon the side of the defence. But, as a fact, there is no such common factor. Alsace-Lorraine and Belgium, East Prussia and Silesia, stand separate one from the other. Even the two on the East and the two on the West, though apparently forming pairs upon the map, are very distinct and distant one from the other, while between the eastern and the western group there is a space of 500 miles.

Let us, before discussing the political embarrassment to strategy produced by these four widely distant and quite separate areas, translate the diagram in the terms of a sketch-map

On the accompanying sketch-map, Belgium,



Alsace-Lorraine, East Prussia and Silesia are shaded as were the four corners of the diagram. No. 1 is Belgium, No. 2 is East Prussia, No. 3 is Alsace-Lorraine, No. 4 is Silesia. The area occupied by the German Empire, including its present occupation of Belgium, is marked by the broad outline, and the areas shaded represent, not the exact limits of the four territories that are so important, but those portions of them which are essential: the non-Polish portion of Silesia, the non-Polish portion of East Prussia, the Plain of Belgium, and all Alsace-Lorraine.

Now, the reason that each of these must at all costs be preserved from invasion is, as I have said, different in each case, and we shall do well to examine what those reasons are; for upon them depends the political confusion they inevitably cause to arise in the plans of the Great General Staff.

(1) *Belgium*.—The occupation of Belgium has been a result of the War, and, from the German point of view, an unexpected result. Germany both hoped and expected that her armies would pass through Belgium as they did in fact pass through Luxembourg. The resistance of Belgium produced the occupation of that country; the reign of terror exercised therein has immobilised about 100,000 of the German troops who would otherwise be free for the front; the checking of the advance into France has turned the German general political objective against England, and, to put the matter in the vaguest, but most fundamental terms, the German mind has gradually come, since October, to regard the retention of Belgium as something quite essential. (a) It gives a most weighty asset in the bargaining for peace. (b) It gives a seaboard against England. (c) It provides ample munition, house-room and transport facility, without which the campaign in North-Eastern France could hardly be prolonged. (d) It puts Holland at the mercy of Germany, for she can, by retaining Belgium, strangle Dutch trade, if she chooses to divert her carriage of goods through Belgian ports. (e) It is a specific conquest; the Government will be able to say to the German people: "It is true we had to give up this or that, but Belgium is a definite new territory, the occupation of which and the proposed annexation of which is a proof of victory." (f) The retention of Belgium has been particularly laid down as the cause of quarrel between Great Britain and Germany; to retain Belgium is to mark that score against what is now the special enemy of Germany

in the German mind. (g) Antwerp is the natural port for all the centre of Europe in commerce westward over the ocean. (h) With Belgium may go the Belgian Colonies, that is, the Congo, for the possession of which Germany has worked ceaselessly year in and year out during the last fifteen years by a steady and probably subsidised propaganda against the Belgian administration. She has done it through conscious and unconscious agents; by playing upon the cupidity of Parliamentarians, of rum shippers, and upon religious differences, and upon every agency to her hand.

We may take it, then, that the retention of Belgium is in German eyes now quite indispensable. "If I abandon Belgium," she says, "it is much more than a strategic retreat; it is a political confession of failure, and the moral support behind me at home will break down."

If I were writing not of calculable considerations, but of other and stronger forces, I should add that to withdraw from Belgium where so many women and children have been massacred, so many jewels of the past befouled or destroyed, so wanton an attack upon Christ and His Church delivered, would be a loss of Pagan prestige intolerably strong, and a triumph of all that against which Prussia set out to war.

(2) *Alsace-Lorraine*.—But Alsace-Lorraine is also "indispensable." We have seen in an earlier part of this article what the retention of that territory means; bewildered by the difficulty of maintaining so enormous a line in the West, the Germans left the unfortified upper corner of Alsace in weak hands (reserves), and not too many of them. The French pressure here has at once called German troops from the north, probably from Champagne, where, as a consequence, the French have advanced in five places. Alsace-Lorraine is the symbol of the old victory. It is the German-speaking land which the amazingly unreal superstitions of German academic pedantry discovered to be something sacredly necessary to the unity of an ideal Germany, though the people inhabiting it desired nothing better than the destruction of the Prussian name. It is more than that. It is the bastion beyond the Rhine which keeps the Rhine close covered; it is the two great historic fortresses of Strasburg and of Metz which are the challenge Germany has thrown down against European tradition and the civilisation of the West; it is something which has become knit up with the whole German soul, and to abandon it is like a man abandoning his title or his name, or surrendering his sword. Through what must not the German mind pass before its directors would consent to the sacrifice of such a fundamentally symbolic possession? There is defeat in the very suggestion; and that very suggestion, though it has already occurred to the great General Staff and has already, I believe, been mentioned in one proposal for peace, is still intolerable to the mass of the enemy's opinion.

(3) *East Prussia*.—East Prussia is sacred in another, but also an intense fashion. It is the very kernel of the Prussian Monarchy. When Berlin was but a market town for the electors of Brandenburg, those same electors had contrived that East Prussia, which was outside the Empire, should be recognised as a Kingdom. Frederick the Great himself while of Brandenburg an elector was in Prussia proper a king: a man whose father

had emancipated that cradle of the Prussian power from vassalage to the crown of Poland. The province in all save its southern belt (which is Polish) is the very essence of Prussian society: a mass of serfs, technically free, economically abject, governed by those squires who own them, their goods, and what might be their soil. The Russians wasted East Prussia in their first invasion, and they did well, though they paid so heavy a price; for to wound East Prussia was to wound the very soul of that which now governs the German Empire. When the landed proprietors fled before the Russian invasion, and when there fled with them the townsfolk, the serfs rose and looted the country houses. Prussia dares not see that happen again. In a way quite different from Belgium, quite different from Alsace-Lorraine, East Prussia is essential. Its abandonment means ruin. Forces will be preserved to defend it, however urgently they may be needed elsewhere, as the pressure upon Germany increases. The German commanders, if they forget East Prussia for a moment in the consideration of the other essential points will, the moment their eyes are turned upon East Prussia, again remember with violent emotion all that the province means to the reigning dynasty and its supporters, and they will do anything rather than let that frontier go. The memory of the first invasion is too acute; the terror of its repetition too poignant to permit its abandonment.

(4) *Silesia*.—Silesia, for quite other reasons (and remember that these different reasons for defending such various points are the essence of the embarrassment in which German strategy will find itself), *must* be saved. It has been insisted over and over again in these notes what Silesia means. Its meaning is twofold. If Silesia goes, the safest, the most remote from the sea, the most independent of imports of the German industrial regions is gone. Silesia is, again, the country of the great proprietors. Amuse yourselves by remembering the names of Pless and of Lichnowsky. There are dozens of others. But, most important of all, Silesia is what Belgium is not, what Alsace-Lorraine is not, what East Prussia is not, it is *the strategic key*. Who holds Silesia commands the twin divergent roads to Berlin northwards, to Vienna southwards. Who holds Silesia holds the Moravian Gate. Who holds Silesia turns the line of the Oder and passes behind the barrier fortresses which Germany has built upon her eastern front. Who holds Silesia strikes his wedge in between the German-speaking north and the German-speaking south, and joins hands with the Slavs of Bohemia; not that we should exaggerate the Slav factor, for religion and centuries of varying culture disturb its unity. But it is something. Now, the Russian forces are Slav; the resurrection of Poland has been promised; the Czechs are not submissive to the German claim of natural mastery, and whoever holds Silesia throws a bridge between Slav and Slav if his aims are an extension of power in that race. For a hundred reasons Silesia must be saved.

Now, put yourself in the position of the men who must make a decision between these four outliers—Belgium, Alsace-Lorraine, East Prussia and Silesia, and understand the hesitation such divergent aims impose upon them. Hardly are

they prepared to sacrifice one of the four when the defensive problem becomes acute, but its claims will be pressed in every conceivable manner: by public sentiment, by economic considerations, by mere strategy, by a political tradition, by the influence of men powerful with the Prussian Monarchy, whose homes and wealth are threatened. "If I am to hold Belgium I must give up Alsace. How dare I do that? To save Silesia I must expose East Prussia. How dare I? I am at bay and the East must at all costs be saved. I will hold Prussia and Silesia—but to withdraw from Belgium and from beyond the Rhine is defeat." The whole thing is an embroglio. That conclusion is necessary and inexorable. It does not appear at all until numerical weakness imposes a gradual concentration of the defensive, but once that numerical weakness has come, the fatal choices must be made. It may be that a strict, silent and virile resolution such as saved France this summer, a preparedness for particular sacrifices calculated beforehand, will determine first some one retirement and then another. It may be—though it is not in the modern Prussian temperament—that a defensive as prolonged as possible will be attempted, and that, as circumstances may dictate, Alsace-Lorraine or Belgium, Silesia or East Prussia, will be the first to be deliberately sacrificed; but one must be, and, it would seem, another after, and in the difficulty of choice a wound to the Germany strategy will come.

The four corners are differently defensible. Alsace-Lorraine and Belgium only by artifice and with great numbers of men; Silesia only so long as Austria (*and Hungary*) stand firm. East Prussia has her natural arrangement of lakes to make invasion tedious and to permit defence with small numbers.

Between the two groups, eastern and western, is all the space of Germany—the space separating Aberdeen from London. Between each part of each pair, in spite of an excellent railway system, is the block in the one case of the Ardennes and the Eiffel, in the other of empty ill-communited Poland. But each is strategically a separate thing. The political value of each is a separate thing, the embarrassment between all four insuperable.

The current number of the *Asiatic Review* contains a mass of valuable matter with regard to the part our Indian Allies are playing in the War, including an article on "The Indian Troops in France," by E. Charles Vivian, and "India's Rally Round the Flag," by A. Yusuf Ali. Another exceptionally interesting article on the fall of Tsing-Tao is contributed by Shinji Ishii, a Japanese writer who deals with his subject from the inside. While topical in many of its features, the *Review* maintains its literary character, and in this connection its literary supplement forms a well-compiled critique of the leading publications of the day.

In *The Kaiser's War*, published in handy half-crown form by Messrs. George Allen and Unwin, Mr. Austin Harrison holds to the view that "if five years ago we had seen through the German purpose and answered it with conscription, this war would not have broken out." In addition to this, he separates Germany from Kaiserism to a certain extent, and—a dangerous attitude at the present time—admits to admiration of "numbers of German things which I do not find in this country," including "a factual honesty of thought." Thus the preface; but, having read more than the preface, we find in the book a fearless criticism of many things which we might do better, and not least among them the treatment of soldiers' wives and dependents. The book is lucid, as its author's work usually is, and is a stimulating work, well worth reading.

Messrs. J. Arrowsmith have just published *The Third Great War*, by Laurie Magnus, a shilling book designed to prove that the history of militarism did not start with Bernhardt and his school, but was combated by both Marlborough and Wellington. The book contains a mass of historical fact in support of its author's argument, which is well thrust home in view of the limits of such a work.

THE DRAINAGE OF THE SALISBURY PLAIN CAMP.

By COL. F. N. MAUDE, C.B. (late R.E.).

I THINK it would be greatly to the public advantage if the House of Lords concentrated on the problems of administration immediately under their eyes here in England instead of discussing questions of recruiting and terms of service without adequate figures before them to go upon.

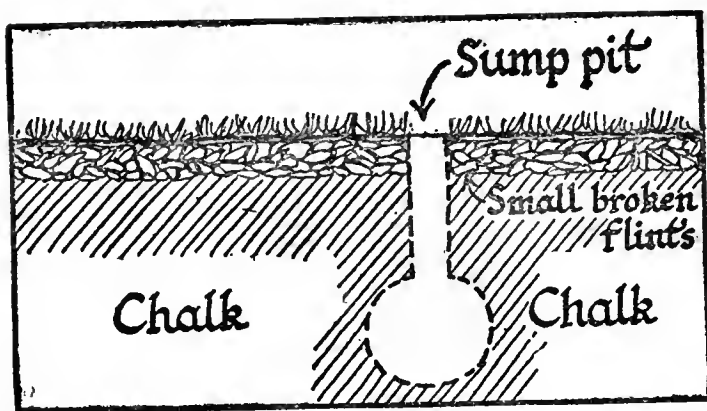
It is the case that the War Office is meeting all the requirements of the generals at the front without stint, but they seem both blind and deaf to the complaints of those at home who are charged with the very onerous duties of raising and training the new armies now forming at various centres all over the country.

It was common knowledge to everyone that the new millions could not be trained in a few days, and it would have been only reasonable foresight to provide for the rain which was sure to fall in the winter months, though no one could have anticipated the abnormal downpours of the last six weeks. Yet even one-half the amount of rain which has actually fallen would suffice to turn any newly formed camp into a bottomless slough.

Every one of these new sites for hut encampments should have been provided at the outset with a decent system of surface drainage, and the men, as they came in, might just as well have been trained to digging trenches, by making drainage channels throughout the camp, as in fortifying imaginary hillsides against impossible contingencies. The action of digging is the same in both cases, and all that is really needed is to harden the hands and back muscles of the men by progressive instruction: the shape of the thing they dig is quite immaterial.

If the men could not be provided with sufficient entrenching tools at the time, a few of Fowler's trench-ploughing machines, such as are being now used at the front, which cut out a trench 2ft. 6in. deep in a single haul, would have paid for themselves over and over again before now, and done much to stop the grumbling besides improving the health of the men now undergoing training.

I have one special case before my mind as I write, viz., the state of the Salisbury Camps, with which every reader of the illustrated dailies is by now familiar. Here there can be no possible excuse for the condition into which they have been allowed to deteriorate, for both as regards levels and subsoil their sites are about the easiest to keep clear of water in Europe.



The accompanying sketch gives a section of the ground. Underlying the short turf familiar to everyone who has ever seen a chalk down, there is a thin layer of vegetable mould resting on sand and light clay (very light) interspersed with small broken chalk flints and rounded gravel. It can be seen in any quarry section all round the chalk hills which encircle London. Sometimes it may be two to three feet thick, in North Kent, for instance, but on the Salisbury downs it is often not more than six to eight inches deep. Below this comes the chalk, which will soak up water like a sponge, and which normally keeps the whole chalk country so dry.

But when troops encamp upon it in any considerable numbers, as soon as the first smart showers fall the action of the countless feet going and coming churns up the surface dust and vegetable mould into what engineers call "puddle," i.e., an impervious clay which retains the water that makes

the "puddle" in the ordinary sense of the word, and this impervious clay in time turns the whole country-side into a moving creamy sea, which flows down country lanes, and renders them impassable, and this is what has happened in the present case.

All that was needed, and is even now necessary, is to break up this impervious film of creamy soup by running ordinary ploughs criss-cross over the country, or by digging side drains about a foot deep.

If the ground is very level, "sump" pits must be provided every acre or so, pits about 3ft. to 4ft. deep, 4ft. diameter, filled with chalk flints or broken brick, and, if things are very bad, centrifugal sludge pumps can be fitted. Vickers-Maxim, I know, make some of them, and the first steam-plough in the district can be requisitioned to work them.

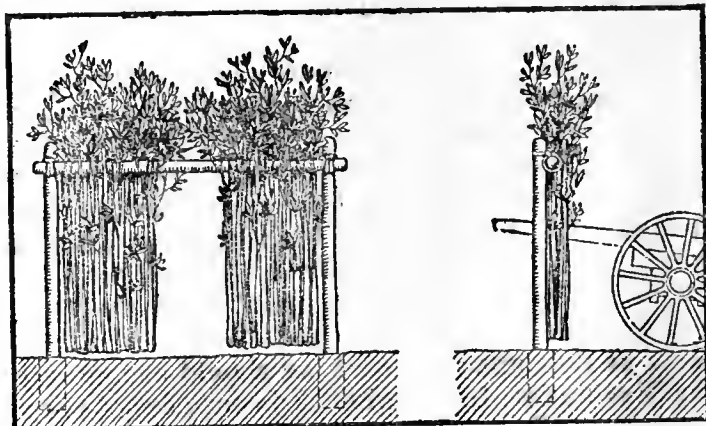
It is really the duty of the commanding officer on the spot to see to all this. As we know, from the very first, Lord Kitchener stated in the House of Lords that he would back any man to his utmost who took the responsibility of meeting his men's natural and obvious requirements; and that this was no empty form of words was at once apparent when several interesting relics of red tape days were presently sent back to the oblivion from which it is a pity that they had ever emerged.

BRUSHWOOD SCREENS FOR GUNS AND FIRE TRENCHES.

Looking at photographs of the various methods now in use for hiding guns and fire trenches from observation, I have been reminded of a most ingenious method of defence, which was used against us by the Maories in New Zealand in the early 'sixties of the last century, that might be usefully combined with the existing types, not only to conceal guns in trenches from observation, but to protect them against shrapnel bullets, shell splinters, and possibly to stop many rifle bullets striking obliquely to the front.

We used Armstrongs against these "pahs," as they were called, and found that our shell could do nothing against them, for they did not offer sufficient resistance to make the percussion fuses work, and if we fired time fuses to burst outside, the splinters were all caught and held.

The idea can be readily grasped from the subjoined sketch.



Light brushwood, willow, and the like, not more than half an inch in diameter, if possible, and with the twigs and leaves left on, were attached to a thickness of about eight inches to a foot, to a horizontal beam, which was lashed to uprights in such a manner that the screen was free to swing when struck—the lower ends of the sticks being loosely seized together with yarn, and cut off just clear of the ground.

Against a background of forest, orchards, or other trees, these screens were quite invisible; and since, as I have said, no artillery fire made any impression on them, we were forced to attack them by regular trench and sap work. As we were exceedingly short of white men, we sent out for natives to do the digging, and as we paid very good wages, the enemy thought it a pity that good money should go a-begging, so sent out a portion of the garrison through the bush to work in our trenches. As one dark man seemed very much like

another, they were made very welcome. But, of course, the enemy was thus fully apprised of our progress, and when we had approached near enough to make a rush for the "pah," with axes to hack the screens down, they trained every old gun they could find down our line of approach, blazed off one volley into the brown of the assailants, then bolted into the bush to a fresh position, where the same game was played over again.

This idea of a swinging screen, however, deserves far more attention than it has yet received. We used to be taught—though I never saw it tried—that two folds of a blanket hanging loosely over a string, and kept about two inches apart, would stop a Snider bullet, and it is quite certain that it would suffice to stop all ordinary shrapnel bullets and small splinters of shell. Further experiments might well be made with the idea.

THE ZEPPELIN BASE ON HELIGOLAND.

THE LOOK-OUT ON THE NORTH SEA.

By L. BLIN DESBLEDS.

THE German airship base of Heligoland is situated in a sort of ditch, the Sapskühhle, which, a few weeks before the outbreak of hostilities, was being prepared for the erection of the most up-to-date Zeppelin shed, and the necessary hydrogen factory. The Heligoland shed, which is now completed, at a cost of £20,000, is of the same type as that built near Cuxhaven and handed over to the German authorities towards the end of April, 1914. Like the one erected in Cuxhaven, the airship shed of Heligoland can shelter two modern Zeppelins. It is about 625 ft. long and 180 ft. wide, and is of the "revolving type," that is, being mounted on a pivot, it always turns so as to place itself in line with the wind. This type of shed makes the entry and exit of the airship safer, since these manoeuvres are thus rendered independent of the wind.

This ability to always place itself lengthwise in the direction of the wind is not the only remarkable feature of the Heligoland airship shed. Being mounted on powerful hydraulic presses, the shed can be made to rise and sink in the ditch. When the airship is not in use it lies in its shed, which is then in its *sunk* position; but when needed for action, to allow the airship to emerge, the shed is brought to its *raised* position. The ditch is of such a depth that, when the shed is brought to its "down" position its roof is just below the level of the ground. It is, therefore, impossible to perceive the shed from the sea, this fact rendering its bombardment by our warships very difficult of accomplishment.

So far as known, the shed just described is the only one on the island of Heligoland from which airships can carry out operations over the North Sea, and there is every indication that the Heligoland airships are kept in constant readiness to sally forth. We see, for instance, that, on the occasion of the daring air raid which our seaplanes made on Cuxhaven on Christmas Day, it was the two Zeppelins from Heligoland, and not those stationed at Cuxhaven, that, at a moment's notice, came out, apparently, to try to resist the raid.

BRINGING A ZEPPELIN INTO ACTION.

In order to appreciate the rapidity with which a modern Zeppelin can be brought into action, it is necessary to have some idea of the method adopted to run it out of its shed.

Inside the shed there are, for each airship, two rails running the whole length of the hangar and projecting some distance outside. On each pair of rails there are four small trucks used to facilitate the quick exit of the airship. Two strong ropes from the nose, and two more from the tail of the airship are attached to the four trucks, there being one rope to each truck. The trucks are so placed that there are two of them towards the forepart of the airship and two others towards its aft. To each of these four main ropes are attached a number of smaller ropes weighted by ballast when the airship is at rest, but held by a number of trained men when it is in readiness to come forth.

To get an airship out of its shed the motor in the aft nacelle is started, causing the trucks to run along the rails, and the airship thereby issues under its own motive power. The men, holding the ropes, run along the rails, and when the two aft trucks, which are near and below the nose of the airship, reach the extremity of the rails, the four main ropes are unfastened from the trucks, and the airship is held by the men only, until the order "Let go!" is given.

When the airship returns to its shed, the main ropes are attached to the trucks which have been brought outside the shed. The aft engine is started, and the airship enters under its own power. The sacks of ballast are quickly fastened to

the airship, and trestles, covered with felt, are placed under the cars of the dirigible. The different balloons are then refilled with hydrogen, and the water pockets, placed between the balloons, inside the envelope, are filled with water, which is the ballast employed on board a modern Zeppelin. The airship is then ready for its next trip.

THE ZEPPELIN AND TORPEDO ATTACKS.

Although there is a report to the effect that the Zeppelin airship has recently been fitted with some apparatus whereby a Whitehead torpedo can be discharged from it with complete success, it is not yet as a fighting weapon wherein lies its greatest value to naval operations. It is, nevertheless, just as well not to ignore this new fighting element of the Zeppelin on the score that, the German airship having, up to the present, failed under certain conditions, it must necessarily fail under all conditions. Such a method of reasoning, in spite of its illogicality and danger, is that which has generally been adopted in the Press, even by qualified writers. It is, however, satisfactory to note that the Admiralty does not look at things in the same light, and is, therefore, in a better position to foresee all eventualities.

There are, of course, no details available as yet of the means whereby the Zeppelin can be used to discharge torpedoes, but it may be presumed that, for such a purpose, the airship is brought down to very near the sea level, and then the torpedo is fired. And, if it be remembered that the modern torpedo has a range of action of over two miles, it will be recognised that the Zeppelin is provided with a new means of naval attack that cannot altogether be left out of account. It is true that, in order to discharge its torpedo with some chance of success, a Zeppelin must come within a range of two miles from the battleship or cruiser against which it may be operating, and that, at such a distance, the airship would be very exposed to gun fire from the warships. However, when all has been said on the subject, the fact remains that this new potentiality of the Zeppelin, especially at night, introduces another factor into naval fighting which cannot fail to add considerably to the strain to which a fleet is already subjected.

The greatest importance of the Heligoland airships, however, lies in the means of reconnaissance they can afford to the German fleet, and may have been the means which rendered possible the recent raid on our East Coast. In comparing the respective values of sea scouts and airships, one might say that there is between them the same difference as exists between a short-sighted man and one whose sight is keen. It is important to remember this fact. It explains the apparent anomaly of our naval airmen bravely carrying out operations over land, to the Swiss frontier at Friedrichshafen, to well into German territory at Düsseldorf and Cologne, and, over Belgium, to Brussels. In all these instances our naval airmen were taken from their usual naval duties in order to attack the airship sheds at those various centres. The object of the Admiralty in thus sending its valiant airmen over land was not to try to deprive the German armies of their Zeppelins, which, as we know, are quite unfit for land warfare, but, in all probability, was to ensure that the German navy should, if possible, not have better eyes than our own.

There are few people so well qualified to write on Belgium and its people as Dr. Sarolea, who, in his book, *How Belgium Saved Europe*, tells the story of the Belgian tragedy, and forecasts, in some degree, the place that the Belgian nation will take in European civilisation when Prussianism is both dead and damned. Published at 2s. by Messrs. William Heinemann, this book is one that will have a permanent interest and will occupy a noteworthy place among the literature of the great war.

CORRESPONDENCE.

CRITICS ON THE HEARTH.

To the Editor of LAND AND WATER.

SIR,—Your self-styled "armchair critio" from Co. Waterford is a kindred soul. I, too, was inspired in the early days of the war with the idea of first catching your submarine (in fishing net) and then cooking it. So inflated was I with my brilliant inspiration that I wrote to tell the Admiralty how to do it, and received a most polite printed acknowledgment. I proposed to cast my net over a wider area than harbour mouths—in fact, from Calais to Dover; but can you believe it possible, sir, submarines have since careered down the Channel and sent refugee ships and ironclads to the bottom with impunity?

A friend of mine walked into the office the other day, and when entrenched in my armchair immediately assumed the rôle of critic. He assured me he had a brilliant idea; it was an invention to blow up trains which were not there. At least, they were not visible, and the invention went nosing along the railway and blew the train up. He also assured me he had penetrated to Lord Kitchener's armchair and had thereupon sold his invention for eighty pounds. I was awfully interested in that eighty pounds, but failed to dissemble, when my friend, to my chagrin, quickly remarked, "But I haven't got it yet; they owe it to me, you know."

I have, of course, been fired by this success with new ambition, and am preparing further brilliant ideas; amongst others I shall tell them how to send up a man-lifting kite (west winds being prevalent, and the Germans being east, unable to retaliate), and to haul up by an endless cord through a pulley on the kite explosive bombs which will be dangled like the Sword of Damocles, over the enemy's heads, and then exploded by an electric wire or the pulling of a string.

If that does not annihilate them all, I shall suggest the provision of steel screens, V-shaped and loopholed, to be attached to the front of a push-cart, or fixed upon runners like mud-skis, each screen to contain within the V a dozen or so of men, who will advance by pushing it along up to the wire entanglement, which will then be cut through with nippers, and the advance continued in absolute security until the trench is reached. The rest will be easy.

It is evident, sir, that if our respective armchairs were removed to the locality of Whitehall, where they ought to be, things would begin to happen.

May I be permitted, even as my co-inspirationist from Co. Waterford, to conclude with the remark, "I offer these suggestions for what they are worth"?—I am, sir, very faithfully yours,

"CRITIC ON THE HEARTH."

AERIAL WARFARE.

To the Editor of LAND AND WATER.

SIR,—In your issue of January 9, "The Airship in Naval Warfare," Mr. Desbleds, in his very interesting article, surely makes one very serious miscalculation when he says: "This is an important point to remember in dealing with the new factor which has been introduced in naval warfare by the advent of aircraft, for it shows that it is only within the arc W.W.W. (150 miles) that a Zeppelin can maintain contact with its adversaries and Headquarters." Granted that the range of wireless of an airship is only 150 miles, what is there to prevent two airships working together, the first 150 miles out from Heligoland practically stationary about

4,000ft. high, the other ranging 150 miles farther out, but still keeping in touch with Headquarters and the enemy through the intermediate airship. As you can see, many modifications of this could be so worked as to bring practically the whole of the North Sea within the range of the Zeppelin.—Yours faithfully, H. TYRELL-SMITH.

St. Aidans, Clonskeagh, Co. Dublin,

"* There is not, in theory, any reason why two or more Zeppelins could not be employed in the manner described in the preceding letter. It is only within the arc W.W.W., however, that a Zeppelin can maintain direct contact with its adversaries and Headquarters.—L. B. D.

THE SPORTSMAN'S BATTALIONS.

To the Editor of LAND AND WATER.

DEAR SIR,—May I ask you to help me to raise the necessary funds for the 2nd Sportsman's Battalion? The facts briefly are these:—

A battalion of 1,400 men costs £8 to £10 per man over and above the money allowed and repaid by the War Office, and this amount the individuals raising the battalions have to find. The money is not for luxuries, but for ordinary necessary comforts which mean so much to a man undergoing strenuous training, and prevents illness, discontent and other troubles. Out of this fund also administration expenses, advertising and printing have to be paid, which are necessarily heavy items. It would be most kind if your readers would send me cheques towards this fund, and so help me in the big national work I have undertaken. The cheques should be made payable to E. Cunliffe-Owen, and crossed 2nd Sportsman's Battalion, London Joint Stock Bank, Ltd., Strand.

Any sum will be gratefully received and acknowledged at once, and every care is taken in the expenditure of the funds.

Thanking you in anticipation for doing the best in your power to help in this matter, believe me to be, yours faithfully,

E. CUNLIFFE-OWEN.

Hotel Cecil, Strand, London,

SUBMARINES.

To the Editor of LAND AND WATER.

SIR,—The readers of your article on Submarines in your issue of January 2 will be interested to have some particulars of an earlier submarine than the "Holland" boat to which you refer.

A submarine was built in 1886, twelve years earlier than the Holland boat. It was, I think, built at Samuda's yard on the Thames, but I cannot recollect the inventor's name. It was sixty feet long, eight feet diameter, propelled by twin screws driven by electric motors and accumulators; these were used for surface as well as submerged running. There was no engine, and the accumulators had to be charged from some outside source. The speed was slow, and the range of operation very limited.

I made several trips in this boat with the inventor, but it was not pleasant work, as there was no periscope, and we had no idea where we were going.

I do not know what became of the boat. When last I saw it, it was in the Tilbury Docks.

C. O. GRIMSHAW.

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THE WAR BY WATER.

By FRED T. JANE.

NOTE.—This Article has been submitted to the Press Bureau, which does not object to the publication as censored, and takes no responsibility for the correctness of the statements.

NORTH SEA AND CHANNEL.

THE loss of the *Formidable* is now attributed to a submarine. The claim was originally made in Germany, though, curiously enough, the number of the submarine has not been stated. If a submarine were responsible (which I still feel somewhat sceptical about owing to the above circumstance), it must have been a matter of absolute blind chance and of the one in a thousand variety at that!

The claims made in Germany about the wonderful skill exhibited by the delivery of a night attack are absurd. Even in daylight the submarine is somewhat in the position of a floating mine possessed of a certain amount of mobility, failing perhaps twenty times for every success secured, and success is then partly a matter of an invisible opponent having been blundered into by the victim. At night these conditions prevail to an enormously exaggerated degree. The boat (if boat there were) must necessarily have been on the surface, and she let fly as the *Formidable* unexpectedly passed her in the darkness.

Here for a moment it may not be unprofitable to discuss the shoals of suggestions which have been sent in to LAND AND WATER, though only a small fraction of them have been published. I would first of all refer to the "diving bell" protection idea of Colonel F. N. Maude. This idea as an idea is quite sound, and, as a matter of fact, it is a regulation fitment in the most modern U.S. battleships. Given sufficient air pressure, a torpedo explosion—unless, of course, the weapon chances to land in a magazine—must be rendered perfectly innocuous, for no water could enter the hole made by the torpedo.

For practical reasons, however, the system cannot be applied to old type ships. It has to be associated with solid bulkheads, because watertight doors, whatever their theoretical value, almost invariably give out in critical moments. The fault does not lie with the doors so much as with the human element concerned. Either the doors are not efficiently looked, or else something gets left in the way to jam them. In addition thereto, however, they are, of course, the "weak link in the chain," very liable to give way owing to some structural defect—defective rivets, or what not, starting the trouble.

One way or another, therefore, the diving bell idea, though quite perfect in theory, is in practice only really applicable to ships fitted with solid bulkheads. Of these we have but a few. We started such bulkheads with the original Dreadnought, but at a later date dropped them again, because of the enormous inconvenience and loss of efficiency in other directions which they entailed. And—but here probably I am approaching the regions of "enough said." To recapitulate: it is the soundest of all theoretical defences, but inapplicable practically to ships not specially designed for its use.

It remains to deal with a mass of correspondence on the submarine defence question addressed to this paper or to me direct. I am afraid that (to be honest) I must say outright that while fully appreciating the patriotic motives which lead to such suggestions, not a single one is of any technical value whatever.

The Navy employs a variety of experts whose sole duty is to "think out things," and these experts are so multifarious that what one didn't think of, another would. The only known case of an amateur hitting on a brand new idea is that of Mr. Pollen with his fire control system; and we may safely put that down as the "one chance in a thousand," and even at that it was only evolved by practical observation on ship-board. It could never have been evolved in a chair on shore. So I trust that readers whose patriotism has induced them to send in "ideas" will forgive me for telling them that were there anything in any of the ideas to which I have been asked to give publicity, the Navy itself would have hit on the idea long ago.

The rock on which all "ideas" founder is technical applicability. At one end of the scale I will take a correspondent who suggested that warships should be fitted with underwater windows wherefrom observers could detect approaching submarines. The idea is brilliant, but, unfortun-

nately it is impossible to see under water more than two or three yards at the most, and a submarine attacks at anything from one to five hundred yards.

Somewhere about the other end of the scale a correspondent suggests steel plates stuck out all round a ship as a substitute for torpedo nets. Up to a certain point, this is logical enough, and would be effective; but its practical application is to be found in the ineffective double bottom which every warship possesses—and that was invented fifty years or so ago by the late Sir Edward Reed. An external defence of a similar nature, to be in any way effective, would be so heavy that it would reduce a warship to the condition of a floating log—fully defensive, perhaps, but incapable of effective attack.

Now, the first and last axiom of the British Navy is to "kill the enemy." The turtle is amply protected by Nature against being killed, but it is the unprotected human biped who manages to make the turtle into soup. His offensive defeats the turtle's defensive.

Up to a certain point, protection counts, but when many years ago Sir Nathaniel Barnaby resigned his position as Chief Constructor of the British Navy, because the Admiralty authorities of those days insisted on offence being subordinated to defence, he probably voiced an eternal truth—much as the "submarine menace" may seem to have altered things since then.

In any case, I cannot see in anything done by German submarines any reason why we should abandon the Nelson doctrine of "Kill the enemy." We have lost ships by underwater attack in this war. We shall—as I have regularly insisted—probably lose many more ships to submarines and mines before we are through. But whenever opportunity has occurred we have been *the attack*, and it is as the attack that we shall ultimately win. The submarine is a new and potent arm; but everything appears to indicate that its hostile potency would in effect be increased tenfold were we to reduce our offensive power in any way in order to obtain a certain extra security against its attack at the expense of our offensive potentialities against larger game. Infinitely better, surely, was the spirit displayed at Heligoland Bight by Admiral Beatty when he acted on the fifty years old maxim of the famous American Admiral Farragut—"Damn the torpedoes."

What submarines are to us to-day, the torpedoes (the word then used for mines) were to Farragut fifty years ago. There is every reason to suppose that the principles under which Nelson acted in one era and Farragut in another still hold good.

There is just one other aspect of the question to which I should perhaps devote a little attention—the suggestion in a letter in last week's issue, that racing motor-boats should be utilised to attack enemy submarines. I am afraid that there is not much in this. In the first place, we already have many fast motor-boats employed on general patrol duty: in the second the sea is a big place, and the chances of a motor-boat and a submarine coinciding are small. Even so, there would still remain the question as to whether the sighted submarine were German or British.

No matter how one regards the question, I cannot from any point of view see that any better policy than that of the British Admiralty could be adopted.

Here we can best go to Germany for elucidation and guidance. We then find a curious state of affairs. In this country no one with any naval knowledge whatever talks of the "skulking German Fleet." One and all are unanimous in conceding that the Germans are doing the best possible in the circumstances under which they have to act. We may say that this or that particular act was folly and a military error—the bombardment of Scarborough, for one example—but we do not condemn von Tirpitz as an idiot.

In Germany, on the other hand, we find naval experts with European reputations declaiming with monotonous insistence that our strategy is all wrong, that Lord Fisher is an ass, Winston Churchill a braggart, and Admiral Jellicoe an incompetent.

Now, all these famous experts are more or less in close

touch with the German Admiralty—they have none of that independence which obtains with naval writers in this country. Outside this, however, they are Germans and patriots. In neither case can we possibly imagine them laying themselves out to explain what we ought to do to hurt them were what we happen to be doing not inconvenient to German naval aspirations. Q.E.D., what our Admiralty is doing is effective and inconvenient to German hopes.

THE HIGH SEAS GENERALLY.

Lord Selborne and others have recently been criticising the Admiralty for sending the late Admiral Cradock to meet the enemy with insufficient force.

These criticisms strike me as singularly unfortunate, because they display a marked failure to appreciate the actual circumstances.

Von Spee, with the *Scharnhorst* and *Gneisenau*, belonged to the China Station. Here we maintained (and any old Navy List will indicate) a force sufficient to deal with von Spee. The normal station of Admiral Cradock was in the Atlantic, where again the disposition of forces was equally adequate.

Von Spee elected, or was ordered, to leave Kiao-Chau to its fate and to operate in a totally different quarter of the world. It was a smart move; but we should not blame Scotland Yard if all the crooks of the West End suddenly transferred themselves to Whitechapel, and the local police were unable to cope immediately with the situation!

This, however, is a fairly exact analogy as to what actually occurred. With all due deference to Lord Selborne and his friends, I maintain that to attack the Admiralty for inadequacy in the matter of the supply of force to Admiral Cradock is as absurd as it is ill-timed—the more so as the *Canopus* was sent to reinforce Cradock as a species of ultra-precaution.

THE BLACK SEA.

A large Turkish transport is reported to have been sunk on January 2 by striking a mine at the entrance to the Bosphorus, and on the 5th another Turkish transport was sunk between Sinope and Trebizond. This vessel was being convoyed by the light cruiser *Medjidieh*, which was attacked by the Russian cruiser *Pamiat Merkooria* and a destroyer. As the *Pamiat Merkooria* is considerably more powerful than the Turk, and the latter escaped, the action cannot have amounted to more than the exchange of a shot or two at long range.

Stories of the *Goeben* continue to float round, and she is now reported to have struck a mine and been considerably damaged. She has, however, so often been reported badly injured that all stories about her are best accepted with reserve.

On the 6th the light cruisers *Breslau* and *Hamidieh* are reported to have been engaged with Russian warships, and to have sustained considerable damage, but no further details are available at the time of writing.

The principal feature of all naval operations in the Black Sea is the curious futility that characterises them. The rival fleets are fairly equally matched in fighting value, with a balance in favour of the Turco-German combination. The operations should, therefore, by all the rules of naval strategy, have taken the form of a strong attack on the Russian Fleet. Instead of that we have had nothing but a series of trivial minor operations and bombardments, which cannot possibly produce any main result.

When, some little while ago, the *Goeben* encountered the Russian Fleet, or a portion of it, she was not engaged in seeking it; and, having met it, she was mainly engaged in avoiding action. Her real objective was apparently some triviality of minor value.

There is presumably some underlying objective in these apparently aimless movements of the Turco-German force: but it is curious that the obvious circumstance that all these operations could be more easily and safely performed were the Russian Fleet defeated first should be so completely ignored.

In the Mediterranean, as in the North Sea, the inaction of the battle fleets of the Germanic powers is perfectly intelligible—their inferiority being such that anything of the nature of a fleet action would merely be courting disaster without object. We cannot attack them because there is nothing to attack. In the Black Sea, however, more even conditions prevail, and the Russians have certainly been out ready to give battle. The chance to attack was given; but not accepted by the enemy.

NAVAL LOSSES.

The war afloat has now continued long enough for us to endeavour to arrive at some kind of profit and loss account. It is not to be arrived at exactly, because, apart from the

fact that tonnage is little or no guide, there is the added complication that on both sides there is a tendency to conceal or to minimise losses.

Generally speaking, we may say that on both sides, if there has been a heavy loss of *personnel*, a loss of *material* has been promptly owned up to—a piece of frankness due mainly to the impossibility of concealment. But whenever the crew or the bulk of the crew have been saved, nothing about material loss has been allowed to transpire.

This, of course, is in accordance with all the precedents of warfare—it is folly to disclose what can be concealed. It is a consideration of this circumstance which prevents me from giving any exact detailed statement as to relative positions now and when the war started.

There has, further, to be taken into consideration the circumstance that on each side new ships have been added. The profit and loss account, therefore, cannot possibly be accurately represented merely by those tabular lists of losses with which the daily Press has familiarised us.

As statements (saving for the factor of concealed losses) they are valuable; but they are practically no index whatever to the real *relative position* of affairs, while they are further liable to produce an absolutely uncalled-for pessimism.

In the following statement I have endeavoured by the use of plus and minus signs of various sizes to represent more or less graphically the *approximate* effect of the war upon our Navy and the German fleet, taking into equal consideration all the various factors of loss, new construction, purchases, and so on and so forth. A * indicates no appreciable change.

		British.	German.
Dreadnoughts	+	+
Battle Cruisers	*	*
Pre-Dreadnoughts...	...	—	—
Cruisers	—	—
Light Cruisers	+	—
Torpedo Craft	*	*
Submarines	+	*

As already stated, this is purely approximate; there is no attempt at exactitude. I am merely endeavouring to convey a general idea. To assist this general idea I have put the "things that matter" in heavier type in the first column.

No one, not even Lord Fisher or von Tirpitz, is in a position to assess relative fighting values one type against another to the types in the first column. We merely know that a Dreadnought in the ordinary way will certainly sink a pre-Dreadnought. We know, also, that a "cruiser" will sink a "light cruiser" in similar circumstances. But no one can possibly assess submarines and Dreadnoughts and say that a Dreadnought is equivalent to so many submarines or, vice versa, that a submarine is worth so many Dreadnoughts. All we do know is that all these various arms are complementary to each other, and that the comparative unimportance of pre-Dreadnoughts and "cruisers" is due to the fact that they represent types of warships which are no longer constructed.

For the rest, we only know for certain that a dozen Dreadnoughts, plus the complementary lesser craft, are superior to a dozen, *plus a Dreadnoughts minus the complementary lesser craft*. And herefrom we may deduce some idea of Germany's loss and our gain. Germany has sustained heavy losses in light cruisers, which are invaluable for scouting purposes. We, on the other hand, have increased and multiplied in this direction, with the result that German big ships or transports attempting to slip out run something like double the risk of detection that they ran on the outbreak of war. This is perhaps the real measure of our gain.

THE MEDITERRANEAN.

According to German wireless, the officer commanding the Austrian submarine *U12* has been decorated for having put two torpedoes into the French battleship *Courbet*. The statement is complicated by the fact that there is no *U12* in the Austrian Navy, which has only eleven boats altogether. It is, of course, possible that a boat built speculatively by the Whitehead Works at Fiume has been acquired and become *U12*; but failing corroborative evidence, the story is singularly suggestive of a Teutonic version of the submarining of the *Viribus Unitis*.

It is expected that the subscription list for Mr. Belloc's forthcoming series of 3 lectures at the Queen's Hall will be closed by Monday, the 18th inst.

Mr. Belloc has arranged to lecture at the Town Hall, Cheltenham, on the 28th January, and at Bristol, on the 30th January.

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THROUGH THE EYES OF A WOMAN

A Word in Season

EVERYBODY who has helped to arrange a village jumble sale is well aware of the motley contributions it attracts, once an appeal for them is issued. These are so many and various, and occasionally so grossly unsuitable, that more often than not an overhauling must take place before the sale is open to the village at large. It is felt by those in charge of the proceedings that tattered garden-party frocks, patent leather shoes of deplorable character, and odds and ends of tarnished finery will hardly add to the well-being of the community. And yet as long as jumble sales continue we may be certain that there will be mistaken people looking upon them merely as a convenience whereby they can get rid of their accumulations of rubbish, and quite oblivious of the purpose they are intended to serve.

It would, however, seem at all times to be a dangerous experiment—this asking for superfluous clothing. There are too many folk who interpret it to their own advantage rather than that of the ultimate recipient. Perhaps this is not altogether due to selfishness; perhaps it is owing to that lack of proportion from which we are assured on excellent authority a large proportion of the race suffers. Be this as it may, the effects are disastrous and the same. Lately there has been an incentive for everybody to ransack their wardrobes. War refugees have arrived here in the utmost destitution, making not only a demand for our sympathy but for our tangible help. To our credit it must be allowed that this in scores of cases has been given both generously and well, and in such instances there is no cause for complaint. On the other hand, certain misguided souls have once again completely missed the mark, forwarding a conglomeration of articles fit only for the dustbin, and hardly worthy of that.

It is really not fair that this fresh strain should be put upon the hard-worked executive of the war refugees' camps. The mere rejection of the unsuitable takes time, to say nothing of the waste of energy involved. We are still in the first month of the New Year, and there is still time for the making of fresh and good resolutions. Perhaps it is not too much to hope that people whose interior economy forbids their contributing ought that is in reasonably good condition will cease to contribute at all. They need not be afraid that the war refugees will suffer in consequence or that their sorely needed supplies will stop.

War Clubs for Women

One of the best ways we can help the men at the front is to see that their wives and families are well looked after at home. And this need by no means stop at material comforts alone; those are more or less assured. That there is, however, a necessity to provide occupation and suitable amusement has been recognised by many people, Lady Henry Somerset amongst their number. Some short while ago a club was started at Battersea, called "The Women's War Club." It provided a place where women could meet, hear the latest news, rest in attractive well-warmed rooms, and buy tea and similar refreshments at small cost. From the moment it was opened this club had an immense success, and it was easy to see it supplied a great want in the most satisfactory manner.

The idea now is to start several other clubs on the same lines, and of these Lady Henry Somerset will be president, so that they will benefit at first hand from her great experience of social work in all its many branches. The working of these clubs will be nothing if not practical. There is to be a central bureau, which will supply particulars and details to

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THE WAR AND HEALTH RESORTS

By A SPECIALIST

NOT content with organised efforts to capture the trade of the enemy, those in intellectual authority are challenging the right of Germany to claim superiority in the realms of the applied sciences. There can be no doubt that many of us have been too prone to accept Germany's opinion of herself without sufficient analysis and disputation, and this may account for the arrogance which has ended in the claim of Germany to dominate the world. German institutions and methods had become so idolised in this country that, as one writer put it, "we must either imitate them or perish." The war has changed all that. It would be foolish to go to the other extreme and underrate the great work accomplished by Germany in most of the spheres of human activity. That would be playing her own favourite game of belittlement: but we are no longer going to bow down to an idol, and we know, after careful inquiry into their title-deeds, that the universal claim of superiority on the part of the enemy is an arrogant delusion.

In the matters of hygiene or therapeutics Germany might seem able to meet the challenge of superiority better than in most spheres. We have not hesitated in accepting the excellence of their health resorts and watering-places in a very practical way. We have been amongst their best patrons. We had ceased to admit ourselves as rivals, with a subserviency which only the present state of national antagonism may impress upon us. The doctors of Harrogate, Buxton, Bath, and the rest, are now actually courageous enough to submit their claim for consideration, even at the high standard Germany claims to have set for itself, and to have some part in the capture of Teutonic interests. This is as it should be.

For perfection in one branch of medical hygiene I have indeed looked in vain throughout Germany and Austria, and have found it "a long, long way" from the beaten tracks of therapeutics. Perfection is a big word, and yet it seems to come to my pen easily after visiting an institution which I found, not exactly "at the back of beyond," but far northward on the civilised paths which fringe the northern seas. In an institution looking out across the Moray Firth to the Black Isle, in a country of rare beauty and equable climate, there exists to-day a diagnostic and therapeutic system that, in the thorough and delicate minutiae of its methods, seems to me to admit no rivalry throughout the whole international domain of medicine. I do not make this claim without a sense of responsibility, as I make it without prejudice, having neither axes to grind nor logs to roll in the matter. I have assured myself of the fact that those in authority are actual pioneers in the systematic study and treatment of disorders of metabolism.

Some twenty years ago a distinguished man of science made the prophecy that the future of therapeutics would be in the hands of the bio-chemists, or, to put it in less scientific phraseology, that the medical treatment of disease would depend to a major extent upon a study of the changes that take place in the chemical conditions of the body. The institution of which I write is, then, the first of its kind in the United Kingdom which is concerned with the treatment of the disorder of metabolism, founded upon an elaborate and systematic study of the chemical changes which are effected by these disorders. I have made a fairly prolonged investigation into the practices at this institution, and, well accustomed as I had been to scientific methods, it was a source of great satisfaction to find that there did exist an establishment that was absolutely unaffected by any of the *laissez-faire* or empirical methods of the medical *flâneur*—an institution which counted neither upon some certain "cure" nor pushed a scientific "panacea" as an effective method for nine out of ten cases of disorder. Having some years ago severed all connection with medical science, and being unconnected with any of its interests, my view may seem the more detached and unprejudiced.

Each case is treated on its own merits. To the aid of the individual patient is called the elaborate investigations of physicians, analytical chemist, and bacteriologist. Prolonged medical diagnosis is supplemented by the most minute day-to-day record of blood, alimentary, and other conditions. Diet is as carefully and systematically prescribed as medicine, baths, and other healing agents; and the effect of food, baths, medicine, exercise, etc., noted and tabulated each day with an attention to uniformity and system which inspires a confidence which is lacking in other more or less

haphazard methods. This institution is not a place at which to play at being cured. Sleep, exercise, rest, diet, baths, massage, X-ray analysis, are all treated with the respect which must be paid by the patient who desires to obtain the beneficent results at which the higher forms of medicine aim. There is no slackness; the etiology or history of each case is noted in the fullest detail; the exact nature of the disorder is arrived at by a prolonged study made by the physicians, the X-ray specialist, and the chemist, and the effects of restriction—increased and modification, as the case may be—duly noted in the elaborate tables which accompany the history of the case. The whole staff are in constant collaboration, and each day the patient is examined with the assistance of all the elaborate and up-to-date machinery available in the institution. The chemical laboratories would do credit to a university, as the various baths are entirely modern and effective.

Dietary—an important item in the establishment—is conducted on the most subtle principles. There are not half a dozen possible diets for a particular disease, but half a hundred, and these are carefully prepared under the eye of the "diet sister" on the nursing staff (an important item), and the results carefully noted, the idea being—say, in a case of diabetes—not to give the patient the minimum but the maximum that he can stand. A careful study of sugar and acetone results gives the physician an excellent idea in what way lies the patient's "salvation." Each patient here has one prescribed meal, which is written on a new menu placed before him at each meal. There is, therefore, no monotony but a delightful variety consistent with the results aimed at. Exercise, baths, and medicine are regulated on more or less the same system, under the guidance not only of the medical staff but that of the expert nurses.

It is gratifying to learn, from both physician and patient alike, that in such cases as diabetes, colitis, anæmia, gout, heart trouble, emaciation, and other disorders the results have been most noteworthy, not only in the matter of cure, but as also affording, in the more untractable cases, a unique basis on which to found the life of the patient after he leaves the institution. The lengthy report drawn up for the benefit of the physician who may be looking after the patient in his private life is one of the most valuable practices of the establishment, giving an elaborate summary of the investigations, treatment, and food capabilities of the patient on which to base his future dietary and therapeutics.

Apart from the remarkable scientific facilities with which I have dwelt, I came away from my visit with delightful memories of social and geographical amenities. The delightful golf and tennis courses, the excellent shootings, the facilities afforded for fishing and curling, the charming park and gardens, the noble sea views and unequalled seaside walks, the mild winter climate, the high percentage of sunshine, the low rainfall, the dry and porous soil, the teeming historical associations, left me a memory which will not soon fade. More than anything else, I came away with a strong impression of the word "thorough" and the thought that it must be very consoling to those who will be cut off from continental "cures" by the war that there is in the north of Scotland an institution which has not a rival throughout the continent of Europe.

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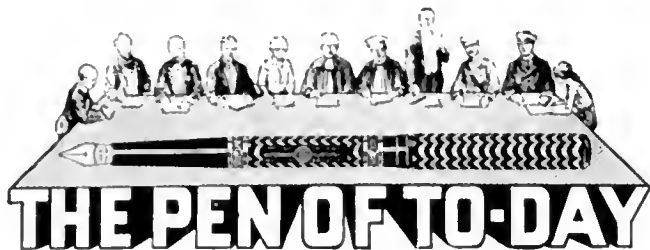
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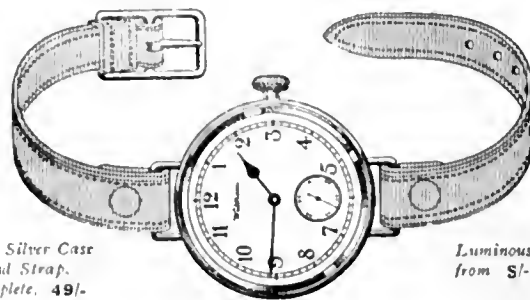
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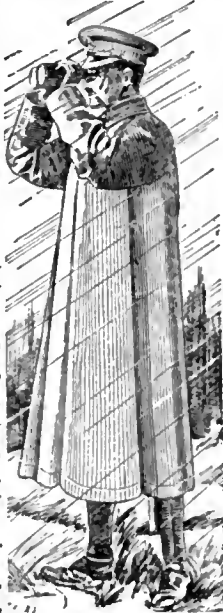
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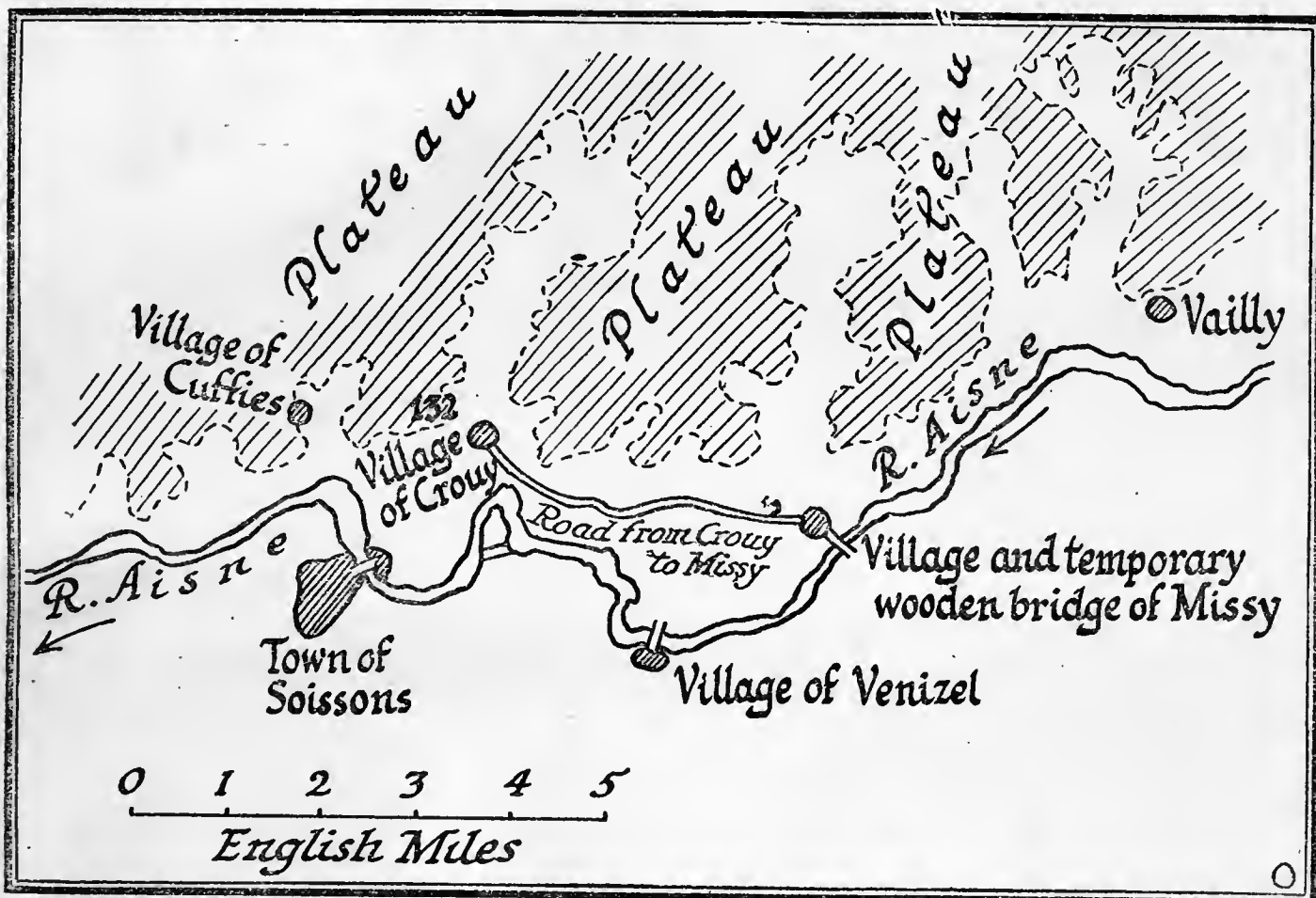
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THE WAR BY LAND.

By HILAIRE BELLOC.

NOTE.—This Article has been submitted to the Press Bureau, which does not object to the publication as censored and takes no responsibility for the correctness of the statements.

In accordance with the requirements of the Press Bureau, the positions of troops on Plans illustrating this Article must only be regarded as approximate, and no definite strength at any point is indicated.



SOISSONS.

ON Friday, January 8, the Divisional Commander before Soissons, at the head of perhaps 10,000 men, who held the slopes of the plateau beyond, received one of those orders of which, during the last month, there have been distributed, perhaps, 100 to the various parts of the French line. It was to go forward vigorously and attack the enemy's trenches upon the crest.

The meaning of this and similar orders, and the significance of the whole affair in its development and consequences, will be dealt with later. For the moment we are only following the events themselves.

The organisation for this effort against the crest from the slopes was made upon that Friday evening, January 8.

The orders were sent out, and it would seem that the movements were made long before daylight upon Saturday, the 9th. On that day the French line, which had been no further up than the base of the slopes and partly upon the valley-floor round about the sixty- and eighty-metre lines, and not yet in occupation of Cuffies, began to push up the chalky slopes that led steeply for nearly 300 feet to the comparatively level top of the plateau.

The first German trenches upon the slopes were carried, and at the same time an effort was

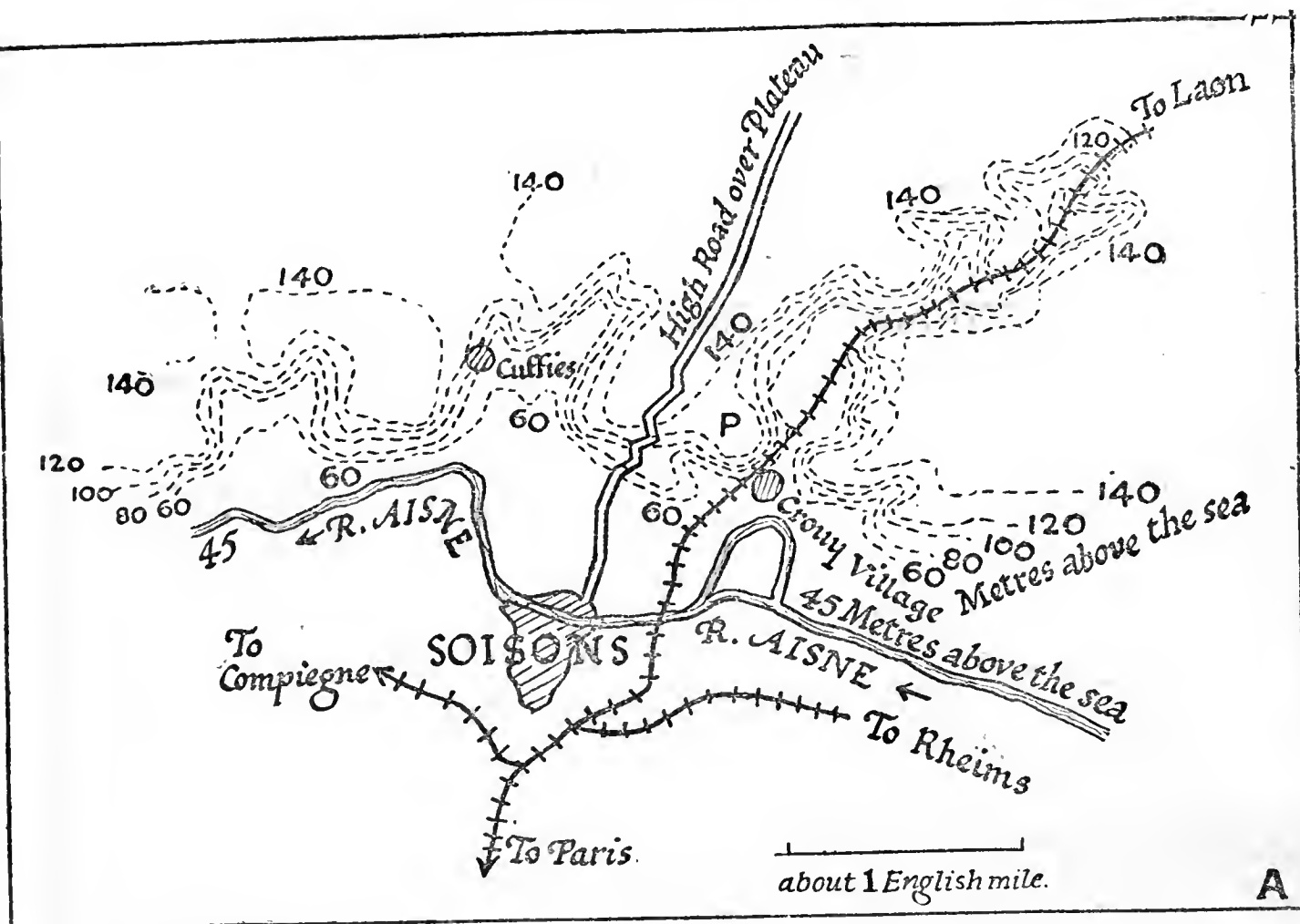
being made to push through Crouy village and advance up the valley which carries the railway to Laon. The straight road from Crouy to Missy (which is marked upon the sketch at the head of this) was roughly the position of the French right at this moment, though there were advanced bodies upon the slopes above.

It must be clearly understood that the mass of the troops were upon the left and centre, and that the great bulk of the fighting took place within a mile to east and west of Crouy village.

The French had three lines by which reinforcements could reach them, and by which, if necessary, they could retreat. These were the bridge over the Aisne within the town of Soissons itself, a temporary wooden bridge in front of Venizel village, and another behind Missy village.

By the Saturday evening the first part of the effort had been successfully accomplished. The slopes were in most places upon this three-mile front in the hands of the French, and they had reached in some points the plateau itself.

On the Sunday, the 11th, the effort continued. Trench after trench of the Germans was carried by the French Infantry, and by the end of the day, or by the morning of Monday, the 12th, the flat spur, the summit of which is 132 metres above the sea, or about 280 feet above the water level of the Aisne in the valley below, was fully held.



The importance of this spur consisted in its forming a gun position, whence the valley above Crouy could be swept. In the accompanying sketch map it is marked P, and its character is clearly apparent. We may regard it, then, as solidly occupied upon the morning of the 12th.

We shall see in a moment how this French local movement, with its comparatively small numbers, its lack of any but a local reserve, etc., connotes a general plan common to all the line, and how it resembled work that was being done elsewhere along the long line. At any rate, by this Monday we find the French on top of the spur at P only just below the general flat of the plateau which the Germans have been holding for now four months. The French had also taken the village of Cuffies, but they were still held at the mouth of the valley where the railway runs, and found it impossible to debouch from Crouy, the village which holds that mouth.

It will be seen that the vigorous French advance had already lasted forty-eight hours.

At this juncture large reinforcements of troops began to appear upon the enemy's side, and these reinforcements having at last produced an appreciable superiority of number for the enemy, the counter-offensive was taken by them, beginning about the Monday noon.

Those of the French who had now gained the crest of the hills were anxious to observe that the valley-floor below them was already flooded, and that the waters were rising to the level of the temporary bridges. Beside the two wooden bridges at Venizel and Missy, the French engineers had added a foot-bridge. Tuesday saw the French facing new and very large reinforcements and losing ground on the right. The waters still rose during all that day, and just after four o'clock, as the ever-increasing numbers of the Germans who were being concentrated against the

French division were beginning to exercise a serious pressure, the bridge of Venizel, the central and most important of the bridges, broke. The reinforcements, and in particular the artillery munitions from the other side of the river, were thus cut off in the French centre, and it was evident that unless these communications could be rapidly restored, the position of the division beyond the river—now fighting, perhaps, three to one—would be desperate. The order to retire was not yet given, when the second bridge, that at Missy, in its turn was carried away.

The French that Tuesday evening still held upon their left and kept the edge of the plateau, but Crouy, which had held them up in the early operations when they were equally matched in numbers, now became more and more difficult for them to hold, and they were pressed down the slopes further east on to the Crouy-Missy road.

It should here be noted, for the purposes of forming our judgment later on, that no considerable reinforcements were suggested for the French apparently until that same day, Tuesday; in spite of the increasing number of the enemy, the original strength of a depleted division had to take all the weight of the fighting.

The German forces continued to increase. They were, as I have said, perhaps about three to one when reinforcements were attempted to be sent forward by the French across the still intact bridges, just sufficient to hold the positions already acquired.

It was now dark, and after dark, in the night between the Tuesday and the Wednesday, the French engineers laboured as best they could to replace the bridges, in spite of the rapidly rising water. By this time the whole valley floor was flooded.

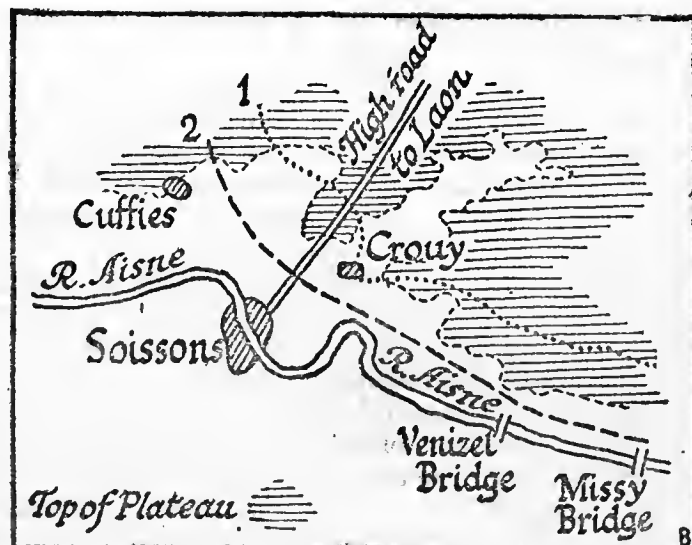
When the morning of the 13th came—that is the morning of Wednesday—the French beyond

the river saw that one of the bridges had been re-established—that of Missy. It had only been done at very great sacrifice, and there is much in the work of the sappers that night to recall the Bérésina. Across the Missy Bridge munitions began to be forwarded to the further bank, especially those for field guns, which were most badly needed, when, just before eight o'clock in the morning, after little more than an hour's full daylight for this work, the single temporary bridge was again carried away before the rising flood, and this while the force in front of the French division had increased to perhaps four to one.

A retirement was ordered, and while the French still clung to the village of Cuffies and the spur at P, they were taken back from Crouy. If Crouy was untenable, the forces along the slopes to the right were obviously untenable also. On this same day, Wednesday, as the right fell back, the left abandoned the edge of the spur and fell back in line with the right astraddle of the great high road to the valley. The position was therefore as in the accompanying sketch B.

The division which the flood had cut off from reinforcement was only withdrawn with the greatest difficulty, but apparently in perfect order.

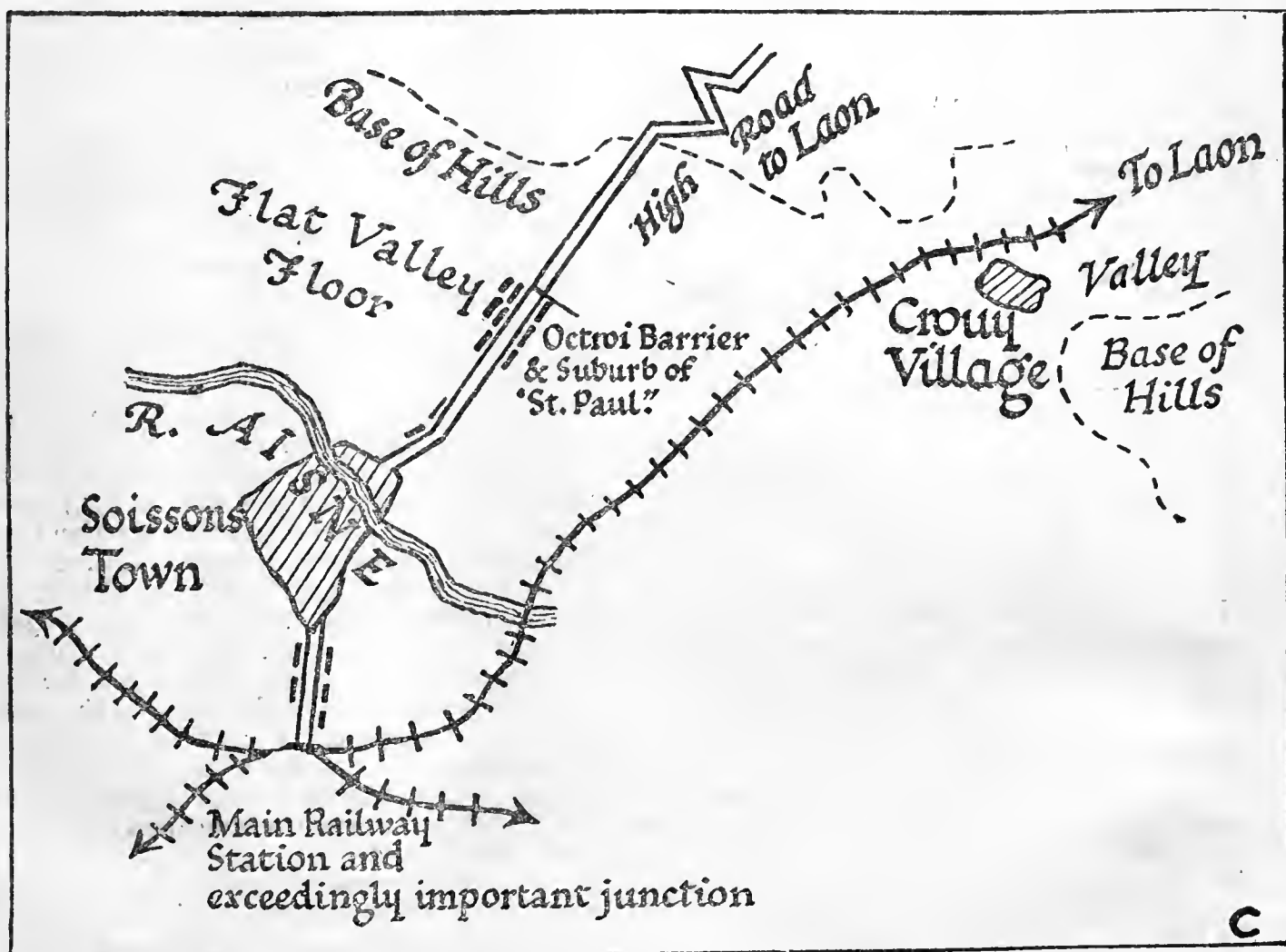
By Thursday, January 14, the remains of the division—probably not more than half of those who had set out on the Tuesday—were back in Soissons; the Crouy-Missy road was abandoned and all the north bank of the river from a point about half a mile above Soissons to a point about half a mile above Missy itself. Further to the east and to the west the French held the hills, and the total result was that the Germans had here advanced across a wedge of ground nine furlongs wide upon a front



of three miles, touched the river Aisne upon that front, and were within a mile of Soissons, the capture of which would give them a bridge across the river.

French detachments held a small point in Missy village, where the bridge was again repaired and so allowed the French right to retire across it. The guns protecting this retreat could not be trusted to the bridge, and after being rendered useless (no very important detail, for there was no ammunition left to speak of) fell into the hands of the enemy: other guns had also been abandoned further to the left, presumably from the loss of their teams and crews, as the ground here is not of a nature to bog them even after such heavy rains.

By that Thursday evening the French retirement was complete, and the French had lost, perhaps, 5,000 in killed, wounded and prisoners; in



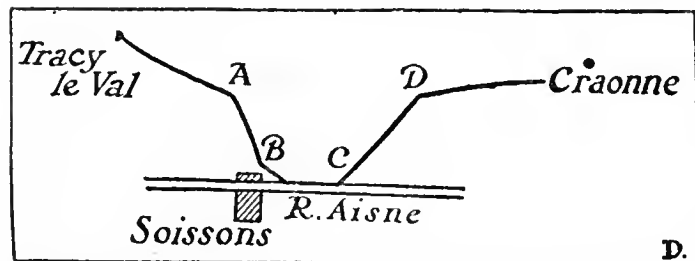
field guns fourteen (as it would seem); and in machine guns perhaps a score.

On the morning of Friday, the 15th, Germans, whose numbers had now increased to about 40,000 men, were everywhere advanced to the line of the river, and had possession of the road from Crouy to Missy. The positions in front of Soissons were maintained by the French, but on that Friday there was a vigorous attempt on the part of the enemy to rush the town itself. Such a success would have put into the enemy's hands the junction of four railways, the best bridge head across the river, and have thrown upon the French artillery the onus of shelling their own city. It is probable that the attempt will be renewed, for the possession of Soissons is of real value. The hand-to-hand fighting got at last as far as the suburb of St. Paul and then went no further. It was checked there, and would appear to have remained so checked during the last four days.

The Germans once in possession of Soissons would have a real advantage, and might almost be said to have recovered there the initiative. They would hold a railway junction of first-class importance; they would have a bridge head over the flooded Aisne; they would have broken the first French line.

The Germans out of Soissons north of the river have accounted for about half a depleted French division, at a far heavier numerical cost to themselves, and have gained 1,800 yards over a front of 5,000 yards, weakening slightly other parts of their long line, which weakening will lead, and has already partly led, to a number of local small successes of the Allies north and south.

Nor can the Germans withdraw more than a certain proportion of the men here concentrated without losing the small advantage gained. For they are in a very narrow salient wedge. The French are far advanced on east and west—especially on the west—and if the Germans are to remain on the Aisne, even over a front of only three miles, they must immobilise great numbers here to keep the angle open. They stand roughly as the wedge A, B, C, D, on the accompanying sketch, and they



must hold, and, if possible, push back A B and C D, or retire. They are, at the moment of writing (Tuesday), engaged precisely in this "pushing back" of A B and C D.

II.—THE MEANING OF SOISSONS.

Having grasped what happened at Soissons, let us ask whether the action has any lesson to teach us upon the present phase of the war.

If we co-ordinate all the facts that we know with regard to that action so far and consider certain results in other parts of the field, we shall find, I think, that we have rather important indications given us here of how the enemy stands in the west.

The salient features of the action at Soissons are five:—

1. A strong French offensive is ordered with

no more than the troops long on the spot (a division) against a particular sector of the long German line.

2. This unexpected offensive delivered at a point chosen by the French (who preserve the initiative), though made without special reinforcement, succeeds at rather heavy cost to them.

3. Upon its success and after a delay of rather more than forty-eight hours *very large* enemy reinforcements arrive, so large that they outnumber doubly, trebly, and at last four times over, the French in the district.

4. These large reinforcements are almost entirely of infantry, supported, of course, by some corresponding proportion of field artillery, but apparently no new heavy artillery.

5. Having succeeded in their object of checking and even reversing the French attack by the bringing up of such numbers, the German counter-offensive is spent and can go no further.

Now consider those five points as fixed and then turn to what happened 200 miles away and more in Upper Alsace nearly a fortnight ago.

1. The French took the offensive because they possessed the initiative, and they took it at a point where they were not expected.

2. This unexpected offensive was made without special reinforcement, by no more than the troops originally present in the district; none of the great French reserve appears to have been used; it is successful, though at rather a heavy cost.

3. Upon its success and some time afterwards—in this case nearly *four days*—large enemy reinforcements begin to arrive, until they quite outnumber the French in the district.

4. These large reinforcements consist almost entirely of infantry, supported, of course, by some corresponding proportion of field artillery, but with no more heavy guns than were present originally.

5. The enemy using their new-found superiority of numbers, in part reverse the French offensive, but their counter-offensive exhausts itself and cannot be pursued.

You see that there is an exact parallel in the main features.

In certain important details there are important differences. At Soissons ground which had been held for some months is lost by the French over a breadth of just more than a mile, while in Upper Alsace all that is recovered by the Germans is a particular swell of land (Upper Burnhaupt) from which the French had but recently driven them, while in the main the whole Alsatian operations record a considerable French advance. The forces engaged in Upper Alsace on the German side are rather less than the forces engaged against Soissons. Also, in the one case, the fight imperils an important town; while in the other the fight only concerns a few ruined villages in the mountains. Also, in the case of Soissons, you are fighting nearly as close to Paris as Reading is to London, whereas in the case of Upper Alsace you are fighting in a region remote from the heart of either belligerent.

But in the main the great features are the same, and there is but one considerable contrast to note for the purposes of our induction, which is that in the case of Upper Alsace, vital as that point

is to Germany, the reinforcements come up *nearly two days later* than in the case of the attack on Soissons.

Now what are the obvious lessons to be drawn from this parallel and its differentiating point? The *first* is that the Germans are not yet working with new formations.

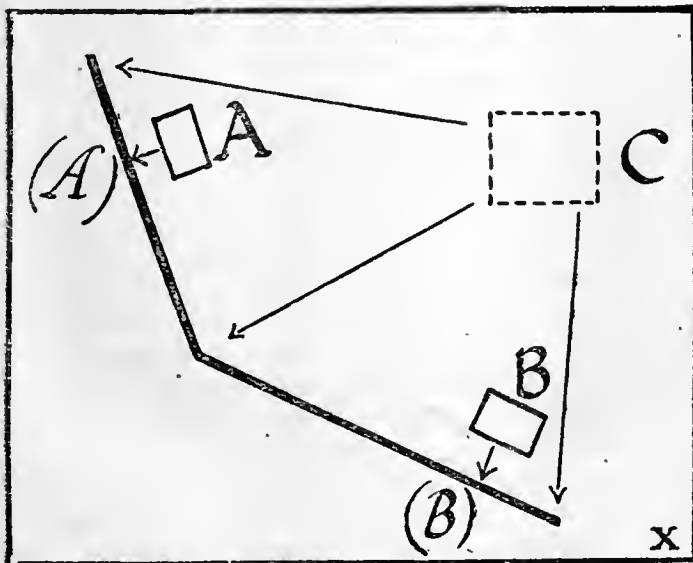
The Germans, never knowing quite where the French are going to attack, are in great peril of having their line broken whenever an attack upon a considerable scale is delivered. They will not risk men, as yet at any rate, in trying to recover the initiative for themselves and in being the first to attack. They are thus compelled to wait for the French initiative. They meet it whenever a strong attack is delivered by hurrying up men from elsewhere, and the men so hurried up, though coming in great numbers, do little more than hold their own.

This conclusion is indisputable, for it is no more than a summary of ascertained facts. But it leads us to another conclusion which, though not directly ascertainable, follows logically from such premises of fact.

This further conclusion is that the Germans strengthen that part of the line which is attacked by drawing men from other parts of their line, not from large available reserves nor from new formations.

It is exceedingly important to seize this, for it makes all the difference to our judgment of the situation.

Supposing the enemy had new large formations already in the field or new great reserves gathered and ready to operate in the West, he would in the first place not wait until some particular point of his extended line was attacked, but would himself begin to attack in force upon a point of his own choosing. That he does not do so, but has to await attack, proves that his men are drawn from the existing lines. But, apart from this, the rate at which the German reinforcements are brought up sufficiently prove my point. Such new reserves or new formations of the enemy would either be grouped close behind the existing line so as to attack wherever the enemy thought fit, or at any rate to be used (even if only defensively) where the enemy thought fit, or they would be grouped at some central point well behind the lines, from which central point they could be directed at a moment's notice and with approximately equal rapidity in any direction where a threat against the continuity of the defensive line was delivered.



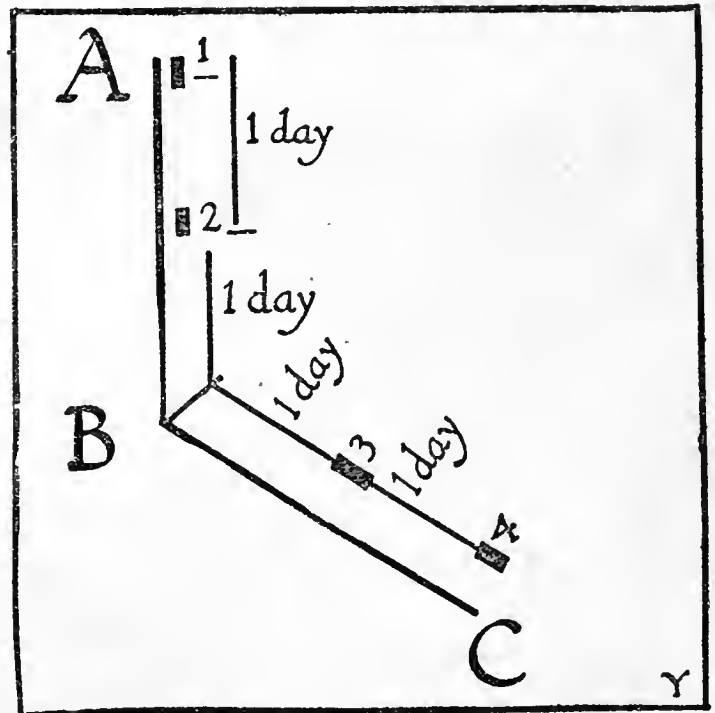
Either such great reserves if they existed would be massed as at A and at B ready to attack on the points of their commanders' choosing at (a)-or at (b)-or for purposes of general defence they would be kept at some central point such as C about equi-distant from all the points that could be threatened and ready to be launched wherever the threat occurred.

But what takes place proves that neither of these dispositions has been made, and that therefore no such new formations or great reserve are yet present upon the western line of the enemy. For the German reinforcements do not arrive until some time after the French attack has put the lines in peril at some point chosen by the French themselves, and, what is even more important to my case, they don't arrive with the same delay.

Against Soissons, which is a central position, they come up with a much shorter delay and also in larger numbers and with more effect than against Burnhaupt, which is an extreme position. At Soissons they arrive within two days; at Burnhaupt after four days.

Put all this together and you may be perfectly certain that work of this kind is, so far, being done at the expense of other parts of the line.

Take a line shaped as is the line A, B, C in the accompanying diagram.



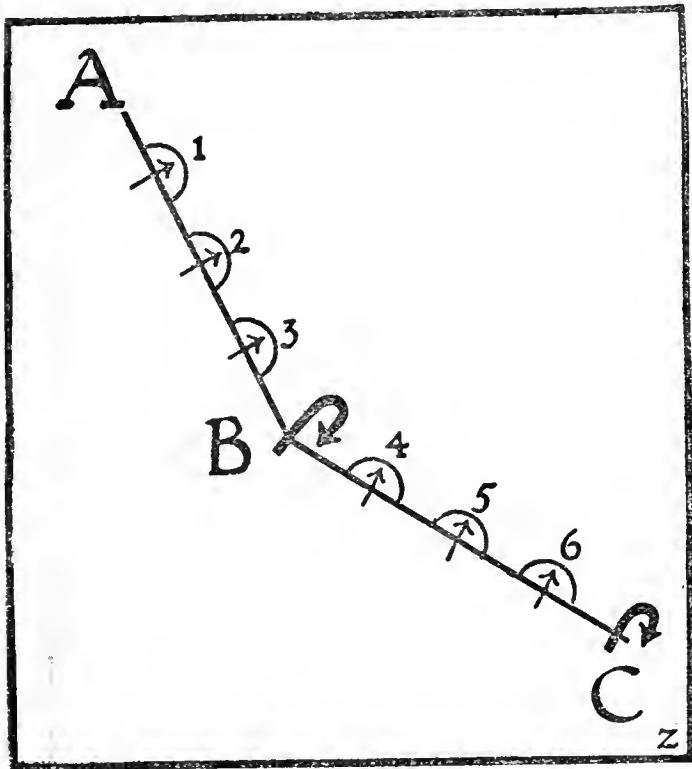
If you find that on the enemy's being attacked unexpectedly to himself and through the action of the Allied initiative at a central point, B, he can bring up reinforcements within a delay of, say, forty hours, while if he is attacked at such an extreme point as C he can only bring them up in a delay of, say, a hundred hours, it is sufficient proof that he is bringing them up from along his line.

For in the case of B he has two short distances to go, bringing his men up from various portions of A-B and B-C; in the case of C most of his units will have a long distance to go, as some of them will have to be drawn from A-B, which is further from C than any portion of the line is from B. Remember that he dares not weaken too much any part of his line: he must draw men in small amounts from all along it. The thing is clear if we suppose him to be drafting men from the four points 1, 2, 3, 4 in aid first of the point B, next of

the point C, and if we allow for the distance between any one of these points one day for entraining, carriage and disentraining. His last reinforcements will, in the case of an attack on B, arrive within a delay of two days, which is the length of the journey from the extremes to the centre; while in the case of C his last reinforcements will arrive in a delay of four days, which is the length of the journey from A to C.

But apart from this arithmetical line of argument we have the noticeable fact that before any of these concentrations took place the enemy's line is demonstrably weakened in all sorts of points save where the main attack is being delivered upon it.

Thus, the last two weeks which have seen a concentration upon Soissons and upon Burnhaupt, in two regions where the French had used their initiative to develop an unexpected activity and to press home a whole series of minor successes were registered by the Allies in many places scattered along the line. There was the advance before Perthes, the perceptible advances at Roye, and in front of Arras, north-east of Verdun and just north of Pont-à-Mousson. In other words, you get on the



line A, B, C, two strong French attacks which by successive reinforcement of the enemy are turned back at B and at C, but meanwhile you are getting smaller but more numerous successes of the Allies at 1, 2, 3, 4, 5, and 6, where the line must in all probability have been perilously weakened by the enemy.

The enemy, then, is still drawing upon his existing line.

There is a second conclusion to be drawn from this state of affairs which is also of moment in aiding our judgment upon the present phase of the war, and this is that *the enemy is now put into great anxiety by the thinness of his line.*

When the French took Steinbach and the gun position dominating Cernay, their whole advance was no more than a mile and a-half; yet it summoned down into Upper Alsace from other portions of the line, at least an extra German division. The French captured, before they lost Burnhaupt,

2,000 prisoners, and accounted for at least as many more killed and wounded; and casualties of 4,000 do not mean less than a division at work—at least where that division is successful.

The French at Soissons found themselves at last in front of quite 40,000 men upon a front of little over three miles. Now, let the argument consequent upon this be carefully noted. If the enemy had made these great concentrations of men for the purpose of attack we could not arrive at the conclusion that he was anxious for the stability of his line. On the contrary, we could conclude that he was quite secure behind his "wall" and could therefore choose his own moments and places for striking.

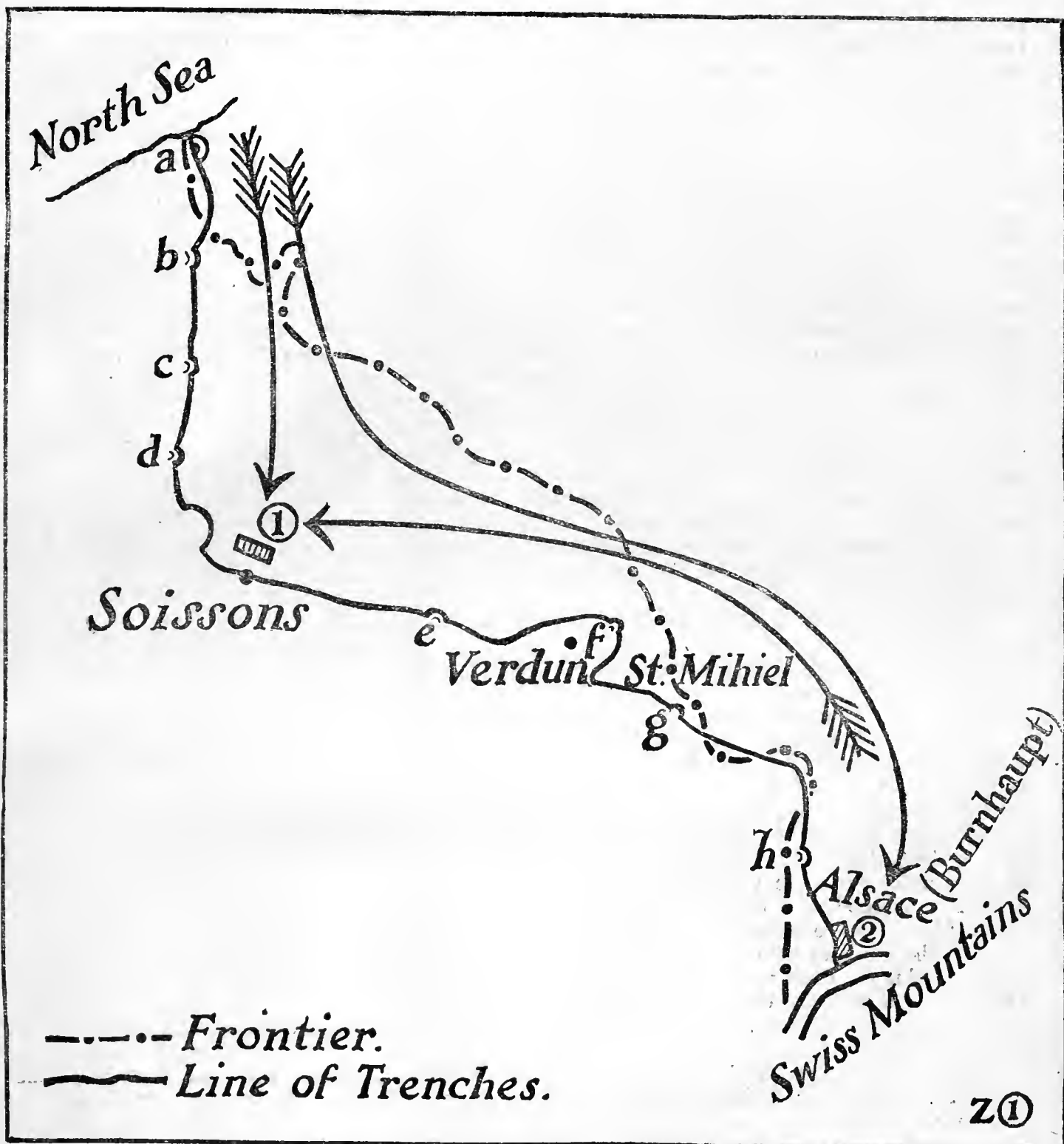
But the enemy made a concentration utterly different from this in character, both at Burnhaupt and in front of Soissons. He did not mean to concentrate and did not attempt to concentrate until the forces that were pressing him had achieved a certain result, and when that result was achieved, although in each case it was quite a small thing in mere distance (the advance of a mile in one case and of less than two miles in the other), he at once is at the expense of weakening his line elsewhere and of forming concentrations for repelling an attack which, slight as it seems, he judges may be fatal.

It is but the repetition with further proof of what has been said so often in these columns:—

The problem before the Allies in the West is not the problem of gradually pushing back an opposing force; it is the problem of compelling that force under pressure to shorten lines which are already as stretched as they can be, consistently with being held at all; and when the compulsion for shortening these lines shall arrive, it cannot take the form of gradual retirements from one line of trenches to another close behind it; it can only take the form of a wholesale retirement, either evacuating Northern France and half Belgium or evacuating Alsace.

All this does not mean that the enemy may not in the near future bring up large reinforcements and new formations with the object of holding his line unshortened. It does not mean that he may not, even in the near future, bring up reinforcements so large as to take the offensive again. It only means that the considerable movements which we have seen during the last two weeks, and particularly at Burnhaupt and before Soissons, prove the non-existence so far of such reinforcement; and it also proves the twin facts that the enemy fears gravely for the stability of his line in the west and only reinforces threatened points at the expense of the general strength along the rest of it.

We can sum up, therefore, and say that in the last two weeks, including Soissons, we have had upon a line of some 400 miles between the Swiss mountains and the North Sea a considerable body of German reinforcements successfully resisting attacks delivered in front of Soissons (1) and in Upper Alsace (2), but that the concentration along the lines to these points has been effected at a cost of so weakening the general strength of the lines, that the Allies have exercised successful pressure upon a smaller scale by the French in front of Nieuport (a), in front of Lens (b), by the French in front of Arras (c), in front of Roye (d), in front of Perthes (e), north-east of Verdun (f), north of



Pont-à-Mousson (*g*), at the mouth of the pass just east of Colmar (*h*), and that we have not yet against us any new considerable bodies of the enemy in the West, but only the same original line which already feels itself gravely imperilled.

CREDIBILITY OF THE EVIDENCE.

It is worth while examining in detail the German communiqué relative to this action, which reached London last Friday. It is perhaps the most remarkable point in the whole affair.

As we have seen throughout this war, official communiqués are the best documentary evidence we have; the credibility of the various parties to them is therefore exceedingly important in the formation of our judgment, and the German communiqués in particular have been remarkable for two characters which at first sight seem to go ill together, but which are perfectly reconciled by what is rather unfairly termed "a scientific temper."

These two characters are:—

(1) Minuteness in detail coupled with accuracy where accuracy is desired.

(2) The harnessing with the same of startling falsehoods which cannot deceive the particular enemy in question, and which must have some political object of influencing domestic or foreign neutral opinion, or even the opinion of Governments and peoples allied with the enemy in question.

These two contradictory characters are reconciled by the motive of the German authorities, which is neither to tell the truth nor to tell falsehoods for the sake of truth and falsehood, but to tell the truth only for the sake of obtaining general credit, and to tell falsehoods when it is thought wise and useful so to do upon the basis of such credit once obtained.

The official German communiqué which appeared in print last Saturday is a very good example upon which to work. I quote it as it appeared in the *Westminster Gazette* (which has from

the beginning of the war, and even before its outbreak, been remarkable for the volume of its German information), and as it was delivered through the Marconi channel.

"The German booty taken in the battle north of Soissons up to the present amounts to 5,200 prisoners, fourteen cannon, six machine-guns, and several 'revolver guns.' The French suffered heavy losses; five thousand killed Frenchmen were found on the battlefield. Their retreat south of the Aisne came within range of our heavy artillery. In how far the proportions have changed, compared with previous wars, a comparison of the battle discussed here with the results of the battle of 1870 shows, although the importance of the battle north of Soissons cannot be compared with that of the battle of August 18, 1870, the width of the battlefield approximately corresponds to that of Gravelotte and St. Privat. The French losses of January 12 to 14, 1915, however, probably surpass those of August 18, 1870, by a considerable amount. This is the truth."

The salient points of this statement are:—

(1) The minute detail of the number of prisoners mentioned, 5,200.

(2) The mention of the number of French killed, 5,000.

(3) A very extraordinary recollection of and parallel with Gravelotte.

(4) A very exact enumeration of guns.

On the fourth point one remarks with interest that the German estimate is too low. The French have admitted a loss of more guns (counting machine-guns) than the Germans give.

The third point is negligible. The two actions, Gravelotte and Soissons resemble each other in nothing save that Germans and Frenchmen were opposed, and it would be wasting the space of this paper to analyse such puerilities.

But the first and second statements are really worth watching. Their value will be apparent to all acquainted with the elements of military history, and I think they can be made apparent to the general reader as well.

On the right bank of the Aisne in front of Soissons was a French division (three brigades) already depleted by war, and further weakened by the big offensive movement ordered ten days ago when the spur above Crouy was taken by it. French officers, eye-witnesses of the scene, tell us that about 10,000 men were engaged. That is probably the rough figure. But swell that figure as we may we cannot make the French more than 15,000 in the nature of things. Had they been perfectly fresh troops just sent out, there would not have been present in the thick of the action many more than 17,000 men, and there is no doubt whatsoever in the mind of any observer used to the meaning of such units that, under the conditions of *this* action, after the heavy fighting which had preceded it, the months of war behind it, and the general disposition of the French along all this section of the line, 10,000 is nearer the truth than 15,000. But 15,000 is a maximum.

The total front over which the action ranged, a front of trenches and of thinly stretched line, was less than three miles, but all the heart of the action was in a section of less than 1½.

The whole point of the battle was the impossibility of reinforcing this single French division in time because the sudden rising of the Aisne had

carried away certain bridges. We are asked to believe that out of such a unit—10,000 at the least, 15,000 at the most—over 5,000 are prisoners and at least 5,000 dead. The statement has no conceivable significance in arithmetic or in any other form of analysis. Put as low as you like the proportion of wounded to killed (and in an action of this sort the proportion of killed to wounded is very high), you cannot in the most murderous action get it lower than one to three where such numbers are concerned. It is almost certain to be higher than that, but let us put it at that; then the killed alone account, with the wounded, for nearly twice the force present! Five thousand killed means at the very least 15,000 wounded. So, after leaving nobody to get back across the Aisne and nobody to be taken prisoner, the Germans have already accounted for twice the number of Frenchmen present if they were ten thousand, or 5,000 more than were present if they were 15,000. No matter by what avenues you approach the result, the German figures of men make nonsense: while the German figures of guns are less than the whole truth and probably based on a real estimate of numbers hitherto counted.

We have no need to accept on their own authority the French accounts, which tell us the comparatively small number of troops engaged upon their side, admit a loss of guns larger than the Germans claim, allow for somewhat over a thousand prisoners, and tell us that the enemy did not pursue. Even if the French contradiction did not exist, the German account is a foolish mixture of accuracy and falsehood on the face of it.

Why this folly? The general accuracy of German official news has been amply insisted upon in these notes, and occasional absurdities intermingled with such accuracy now and then noticed. Those absurdities have been increasing of late in proportion to the accurate rest. Why?

I can only hazard the suggestion that there is something in common between the fantasies themselves and the romantic language which commonly accompanies them; and that that something in common is a necessity for impressing domestic and neutral opinion. Hence the silly parallel with Gravelotte (which would be like comparing Givenchy with Waterloo), hence the theatrical rant about all this being done "under the eyes of the War Lord himself," hence the comparison of the German failure in front of Warsaw to the great victory of Salamis, and hence those extraordinary phrases which appear reiterated at regular intervals that (for some mystical and incalculable reason) victory, that least determinable of all human events, must necessarily fall to the German General Staff which has hitherto failed in every single one of its main plans: the envelopment of the Allies in the West, the entry into Paris, the investment of Verdun, the march upon Calais, the seizure of Warsaw and of the railway nexus there, the subjugation of Servia and the "counting out" of the Servian Army, the raiding of Caucasia, etc.

It will be an advantage to the Allies at least, and in particular to those whose duty it is to study this war in detail, when the German communiqués return to the older plan (far better suited to the German temperament) of accurately detailing a mass of undigested matter, and thus supplementing the continued frankness with which the Ger-

man casualties, German prices, and other capital points of news are conveyed by the Germans alone of the belligerents to the outer world.

THE EASTERN FIELD.

IN the eastern field of war there has been an almost complete lull along the whole line, with the exception of some violent fighting upon the Bzura, which has not advanced the enemy, and in connection with which the Russians have attempted no advance either.

There are in this field but two points to notice, upon one of which we have so little information that it is impossible to do more than state the fragmentary news and base a doubtful guess upon it. The other is a still smaller detail, but clearer in its meaning and effect.

The first of these two pieces of news is the announcement that Russian forces have occupied Sierpe in the belt of North Poland between the Vistula and the East Prussian border, have pushed forward across the Skwara (?) and are therefore within forty miles of Thorn. Such a position is obviously upon the flank of the main German line of communication for Hindenburg's advance on Warsaw, to wit, the main railway from Thorn to Warsaw. This railway nearly touches the Vistula at a point about half way between Plocz and the frontier, and is everywhere within raiding distance of a force that shall have crossed that stream from the North.

If we were dealing with considerable bodies of Russians operating in this theatre the news would be of great moment, but I submit that in the lack of further evidence we have no right to presume large operations as yet in this belt of North Poland between the East Prussian frontier and the Vistula, and until we know more about them there is no ground for planning out any considerable consequences or illustrating the movement as a whole.

It appears to be so far a movement of cavalry operating in no great numbers against smaller detached bodies of cavalry upon the enemy's side, and one's ground for believing this is, first, that very large Russian movements in this district, being supported by no railway, would necessarily be slow and would as necessarily have given rise to vigorous changes of disposition in the German forces south of the river. There has been no trace of the latter and therefore we should not, in the lack of further evidence, believe in the former. A Russian force has entered Plocz, but everything turns upon the total number of the Russian forces north of the Vistula, and, I repeat, that if that number were very great the whole German battle front would turn northward. That there may be a movement there later on the part of the Russians, and that it will profit them is seen by merely looking at a map, but that they will soon be able to concentrate and to equip sufficient men in this district so easily there is no proof.

The second piece of news which, as I have said, is more detailed and certain, though dealing only with the minor point concerned, the seizure of the Kilribaba Pass by the Russians in the wooded Central Carpathians between Bukovina and Transylvania, that is, in the midst of that Rumanian population, the Russian presence among whom is having such a powerful effect upon the

international position of the Rumanian Government at this moment.

This is the first point upon the watershed of the Carpathians which the Russians have crossed since the second battle for Warsaw began, and since, in conformity with the Russian retirement on the north for the protection of Warsaw, the Russian Armies south withdrew some forty or fifty miles from Cracow to the line of the Dunajec and abandoned the passes over the Carpathians, watching only the mouths of the same.

Now, the remarkable point about this is that it has taken place at a comparatively unimportant moment. The great passes which carry one the railway and the other the high road from Transylvania into Bukovina run to the north and to the south of Kilribaba, and here the Russians have not even attempted to move to the crest of the pass until better weather shall assure their transport. The Kilribaba is only a saddle of wooded land between the sources of two mountain torrents, not suited for taking any considerable body of troops from side to side. We must wait for such a movement until weather conditions render it possible for the Russians to bring up wheeled transport in sufficient amounts for the support of heavy columns and the forcing of the heights, and it is not in any way probable that this movement upon a minor saddle in the wooded hills can be used for any large offensive movement towards the Hungarian side. But the pass has this advantage: the road down from it on to the Hungarian side is easy and moves *away* from the nearest railhead, so that the enemy can only concentrate against it with difficulty.

THE CAUCASUS.

In the Caucasus we are still without news from the Turkish side, and that may make us fairly certain that the Russian description of the consequences of the late Russian victory is accurate enough. The fighting at Karai Urgan, in which the 11th Corps of the Turkish Army (the only corps, it may be remembered, which remained intact after the débâcle of a fortnight ago) attempted, by vigorously attacking the head of the Russian Army, to withdraw pressure from the retreat of the broken 10th Corps, has, according to Russian accounts, collapsed. It cannot be true that this large body of men has been "annihilated," for there is no account of their having been surrounded or intercepted in their retreat, but it is evidently true that the whole body has given way, that great numbers of the unwounded stragglers have fallen prisoners to the Russians, as well as masses of wounded, and evidently also, great quantities of field equipment and artillery. The unofficial statement that the whole of the artillery of the 11th Corps has been taken cannot be accepted until we have official confirmation, and it is in any case exceedingly unlikely. What would happen in an action of this sort, fought in driving snow thousands of feet above the sea, would be the perpetual abandonment of pieces stuck in the drifts during a retirement, or captured time and again by swoops of cavalry on the rearguard, but they are not conditions under which the whole artillery of an Army Corps is to be found concentrated in one area and taken en bloc. That did happen apparently to the artillery of the 9th Turkish Army Corps on January 3rd and 4th, but that, as we know, was intercepted and surrounded.

Nothing of the sort has happened to the 11th that we can gather.

None the less, the Turkish offensive in this district is evidently at an end, and the First Army,

comprising three full corps and the greater part of a fourth, no longer exists, save perhaps in sufficient force to undertake the defence of some previously fortified position.

A FURTHER NOTE ON THE NUMBERS OF THE GERMAN RESERVE.

NOTES upon the actions reported in the various theatres of war have their interest and sometimes, it may be hoped, their use, if they are accurate and sober in the formation of opinion. But another matter, which has been referred to several times in these columns, is, if we judge it accurately, not only of interest but of the highest practical importance, and that is the real reserves of the enemy.

My apology for returning in a few lines to that subject this week is that the discussion has reappeared with some activity in the Press this week, and that a sound conclusion upon it is really vital to our expectations of what the war will become in the future, and of what this country in particular must expect to meet in the spring. Figures have already been given to show that, though paradoxical enough, the mere reserves in man power is larger in the weaker of the two Allies—Austro-Hungary, but for the moment we are more concerned with the possible reserves or “disposable” men left to the German Empire for possible later use in the field.

Now, here there are two schools, roughly speaking. The school which expects Germany to produce, trained and equipped within the next few months, certainly three million, possibly four million, of men; and the school which estimates her powers in this direction at certainly less than 2½ million, and probably nearer two million men.

I have so often given figures showing on what the second school relies for its judgment that I am almost ashamed to repeat them, but as they are absolute figures and seem to lead to unavoidable conclusions, and as none the less very different conclusions have been reached upon other figures by other forms of computation, I will briefly restate them here.

We have not got to guess, we *know* the total number of adult males of military age, from 20 to 45 years inclusive, in the German Empire. It is in round numbers 12 million men.

We have not got to guess, we *know* that Germany has hitherto put into the field at least 5 million. She may have put more, she cannot have possibly put less, for her known minimum losses, coupled with the known minimum number which can hold the western and manœuvre on the eastern front, make this calculation certain.

Five from twelve leaves seven. Now, the quarrel is between those who say that of this 7 million 4 million may appear (as an extreme), and those who say, as another extreme, that only 2 million will appear. The argument for those who think that four will appear is probably based upon three erroneous elements of calculation.

(1) They consider only the total number of adult males and omit all reference to necessary civil employment: that is the chief error.

(2) They calculate the number of “unfit,” not

upon the known proportion in armies where universal service is really imposed (as in France or in Bulgaria), but merely upon the normal returns of German calculations dealing with men who in any case are not to be taken as soldiers.

For the Germans can call up of young men of military age just over 600,000. Of these they take half to be soldiers (including, of course, none of those who are at all doubtful in health), the remaining half they draft into either very partially trained or, more often, wholly untrained reserves. They chose to put down the incapable *on paper* at so low a figure as 7.73 per cent., but that is perfectly ridiculous in practice. No one can get the proportion when you are taking men for actual service, and not merely for being written down as possible soldiers on paper, below 20 per cent., and the real proportion in practice is much more like 25 per cent. The absurd allowance of 7.73 is arrived at by only examining a selection of all possible young men, and by putting into a nominal reserve (knowing they can never be used) many of those who, in actual conscription, would either have to be rejected or would break down.

(3) Those who are wedded to the higher figure allow between 20 and 45 a loss of only 2 per cent. a year for each year, half for death and half for accident, etc.

These decreases, in practice, are also far too low. They represent the number of males who are incapable not only of military service (because they are dead, or have been run over by carts, or have gone blind, or mad), but also everyone up to 45, no matter what the state of his lungs, stomach, heart, weight, brain, eyesight, feet and veins. Common sense will tell anyone that after 35, at least, men who have never been soldiers in their lives and are suddenly called up from sedentary occupations, do not show a proportion of 25 per cent., as young men do, of inefficiency (which only means military inefficiency), they show a proportion of certainly half and probably more than half. They do this without question when the age of 40 is approached.

Now, in order to form a judgment as to what the real reserves in the German Army are now, we simply have to decide which of these two views is in practice sound. We know from proved and ascertained experience that at least 25 per cent. of men must be rejected. That leaves 9 out of 12 million. We know that *at the very least* 2 million of able-bodied men must be retained to run “the nation.” That leaves you less than 7½ million. We know that 5 million are already in arms at least. Surely the calculation is obvious!

Mr. Belloc has arranged to lecture at the Town Hall, Cheltenham, on the 28th January, and at Bristol, on the 30th January. His next lecture at the Queen's Hall, will take place next Wednesday at 8.30 p.m.

In response to the general desire for an afternoon lecture, Mr. Hilaire Belloc will speak at 2.30 on Tuesday, February 9th, at the Queen's Hall. His next evening lecture is on Tuesday the 26th inst.

THE WAR BY WATER.

By FRED T. JANE.

NOTE.—This Article has been submitted to the Press Bureau, which does not object to the publication as censored, and takes no responsibility for the correctness of the statements.

HIGH SEAS GENERALLY.

The "Königsberg."

THE *Königsberg*, which was bottled up in the Rufugi River, East Africa, is now reported to have been destroyed. According to a story published by the *Southend Telegraph*, the captain of one of the merchant ships which was sunk in the blocking operations, who had just got back, states that the Germans completely hid the ship with foliage, entrenching some of the crew to prevent any cutting-out expedition.

The ship was, however, located by aeroplane, and with fire directed from aloft, her destruction by gun-fire quickly followed.

Von Spee's Squadron and the Admiralty.

In reply to correspondence received on this subject, if readers who write asking for details or an explanation as to the meaning of my statement last week that we had a "sufficient force" on the China Station will refer to the issue of October 10th they will find "deleted by Censor." I can only repeat that the force was sufficient to deal with him. Apparently he outmaneuvered us by slipping out secretly before war was declared.

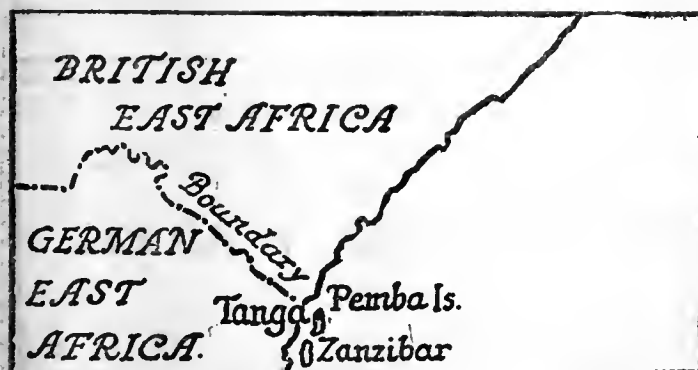
The "Kronprinz Wilhelm."

The German armed liner *Kronprinz Wilhelm* has been heard of again, having recently sent into Las Palmas the crews of one British and three French ships sunk by her. As the first was captured so long ago as October 28, and the other dates are November 21, December 4, and December 20, it will be clear that the career of this 23½-knot corsair is not of a particularly mischievous nature. From the British ship she took 3,000 tons of coal; but of the others, one French steamer was in ballast and the other two Frenchmen were sailing vessels.

The inference from the above intervals is that the *Kronprinz Wilhelm* must have been considerably harried by British cruisers, which, though unable to get into action with her, have sufficed to negative her activities to a very large extent. Theoretically, a ship like the *Kronprinz Wilhelm* would be able—if unimpeded—to capture a ship or two a day.

The "Dacia" Case.

A case which may have far-reaching consequences is that of the German merchant ship *Dacia*, which has been purchased by the son (American) of a German, and has loaded a cargo of cotton for Bremen. It involves a delicate problem of ownership and a variety of other issues on which questions of precedent are likely to be founded later on.



East African Operations.

A somewhat belated report of an East African affair has just been issued in Berlin. It is to the effect that on November 2 two British cruisers and twelve transports appeared off Tanga and subsequently effected a landing of 8,000 troops at Ras Kasone, where, after a three days' fight, they were repulsed by 2,000 Germans, although supported by a heavy fire from the cruisers.

This report can, I think, be taken with a considerable grain of salt; two gunboats and a small landing party of marines is more probably the correct presentment of affairs. The British force is stated by the Germans to have consisted of one European and four Indian regiments.

THE BALTIC.

With the advance of winter there appears to be a complete lull in the Baltic. The German ships are reported to have withdrawn entirely, but whether they have done this because they believe the Russians to be ice-bound, or as part of some scheme of strategy, is not evident.

As I pointed out some time ago, there is no absolute necessity for the Russian Fleet to be frozen in, since Libau is an ice-free port. Also there is a good supply of powerful ice-breakers, in addition to which the new Dreadnoughts of the *Gangoot* class have ice-breaker bows instead of the usual war-ship prow.

Consequently, although nothing has happened of late, it by no means follows that the next few months will be uneventful.

THE NORTH SEA AND CHANNEL.

Up to the moment of writing there has been a singularly quiet time in naval operations, or, rather, perhaps, one should say, in operations that are heard of, for only those actually engaged can say what is going on behind the scenes.

Perhaps the chief actual incident is the way in which Germany has seized the Von Tirpitz idea of commerce destruction by means of submarines and aircraft.

Either operation would, of course, be "piracy" pure and simple, devoid of even the technical justification which was put forward in the matter of the East Coast Raid. Considerations of this sort, however, are not at all likely to interfere with any German schemes; and so it is mere waste of paper to discuss questions of legitimacy. Far more germane is the question: "Can anything really be done?" In Conan Doyle's story, "Danger," everything was done, and done by eight submarines only!

Conan Doyle, however, was engaged in writing fiction—a readable story dealing with fictitious submarines far superior to any existing craft. His boats were somewhat of the genus of Jules Verne's *Nautilus*, in "Twenty Thousand Leagues Under the Sea." We have not got to deal with Captain Sirius or Captain Nemo, but with the technical possibilities of the present year of grace.

Now, supposing we credit Germany with twenty suitable submarines—certainly the utmost effective force that she has available for the purpose.

The first thing that occurs to one is that this would leave her with few or no boats to continue ordinary naval operations with, and a state of affairs of that sort would materially assist the British inshore squadron in rendering itself particularly unpleasant, plus a free hand in arranging for an uncomfortable reception for returning German submarines.

We may perhaps allow an average of four torpedoes per boat—call it a total of eighty torpedoes. Now the history of the war is that it usually takes two torpedoes to sink a warship, and that a mine, which is infinitely more powerful, has nothing like the effect on a merchant ship that it has on a warship. Wherefrom we may assume that a liner (having no magazines to be exploded) would certainly require two torpedoes and possibly three.

Data as to the number of misses made by German submarines are not available, but one way and another we can safely put them at fifty per cent.

Along these lines we get a hypothetical total of twenty merchant ships destroyed out of a gross total of four thousand or so. And those twenty, it has to be remembered, must either be sought for out at sea or else waylaid more or less inshore, where motor-boats may be expected to be "hunting periscopes."

One way and another, therefore, especially since we are by now fully alive to the trick of the "mother ship" under a neutral flag, I do not think that the German threat can be regarded as anything but a stupendous piece of cheap bluff.

The aerial part of it certainly is bluff pure and simple. The submarine part may possibly be attempted as a final effort; but if so it is certainly doomed to failure, not only for the reasons stated above, but also because it fails to take into account the circumstance that the British Navy would undoubtedly be *doing something in the meantime*.

The Loss of the "Formidable."

I have received an unprecedented number of letters on this subject dealing directly with the cause of the disaster—more than one of them anonymous, and therefore impossible to reply to privately. Of these the most important is a correspondent who elects to sign himself "Yours disgustedly, One who knows." I designate his letter as important in spite of the fact that on one page he attributes the disaster to "disobedience to Admiralty orders," and on the next lays all the blame on the Admiralty! This because he mentions some other incident known to me as having occurred, but to which I cannot refer because it would certainly be deleted (rightly I think) by the Censor.

Other correspondents favour me with stories of signalling to German submarines which they have either heard of or seen. On this subject of signalling I may mention that in the capacity of scoutmaster at a certain place I have spent many a weary night in damp ditches in company with a police inspector watching suspected houses and places, but (much to my disgust) never yet struck a case which had anything in it. I have also done duty with the military on similar fruitless nocturnal expeditions.

That information gets out is true enough; but over six months of some personal experience I am reluctantly compelled to confess to complete (or almost complete) scepticism to nearly all the signalling stories. If there be any spy signalling it is very rare, and it is of the utmost importance that we should keep our heads in the matter, because every false alarm makes things easier for genuine spies. This is the psychology of the official apathy of which we occasionally hear so much. In so far as the enemy may be connected with any signalling or supposed signalling, I should say that in the majority of cases it is done with the direct object of creating the "nothing in it" idea.

Returning to the general mass of correspondence I find that a large number of readers refuse to accept my theory that if a German submarine accounted for the *Formidable* it was a matter of "blind chance." A foolish captain stalked by a clover German submarine is the favourite theory. I am unable to find any evidence whatever to support that theory.

Even in daylight there is a tremendous amount of luck in submarine operations, and at night, especially in a gale, a submarine must necessarily be blind, and no amount of skill can affect results. Given a single mine adrift and a submarine, a ship would in such circumstances run almost exactly equal risks from either.

As for the second explosion there is little or no evidence on which to base even a hypothesis as to whether it came from the engine-room or was caused by a second torpedo. The sinking ship having been located it would, even in a gale at night, be quite possible for a submarine to work round and fire at her; but it would be a case of wasting a torpedo to have done so.

Non-Sinkable Ships.

Amongst the mass of correspondence which have reached me in connection with the loss of the *Formidable* comes a letter from France recalling an old plan of Captain Bazin, the integral idea of which was a flat-bottomed ship supported by huge cylinders. This particular idea is unfamiliar to me; but I take it that in substance it is more or less on the lines of a vessel subsequently projected by the great Italian naval architect, Cuniberti. Any such ship would be proof against either torpedoes or mines. But it is by no means clear how she would manage to attain any speed, or where she would stow her machinery.

In any case, however, the duration of modern wars is not long enough to permit of the introduction of new types; even in the old wars, which were infinitely more lengthy, it was rarely found possible to embody new ideas. In 1795 the two-decker *Glatton* was experimentally armed with twenty-eight 68 pounder cannonades, and twenty-eight 42 pounders. She fell in with six French frigates—one of them a 50-gun ship, two others of 36 guns. With her what were in those days abnormally heavy guns she beat off the attack without the least difficulty, though by all the general ideas of the time she should have been an easy prey to her antagonists. Yet it was never found possible to adopt a corresponding armament for other British ships—some kind of technical difficulty presumably intervened.

To construct a ship on Bazin lines would certainly take at least two and a half years, probably longer, and it would then be only a purely experimental unit.

The sensational stories about the rapid building of the *Dreadnought* some years ago are mainly responsible for the prevalence of incorrect ideas on the subject of the rate of construction. The rapid building of the *Dreadnought* was somewhat on a par with the "express locomotive built in a day," of which we occasionally hear. There is really little or no abnormally rapid building—what does take place is a rapid *putting together*.

In the case of the *Dreadnought* the maximum of material was all collected together before the ship was commenced; but for that she would have taken the normal time to build. It is impossible in actual practice to accelerate construction to any very great extent—there is a limit to the number of hands which can be usefully employed without getting in each other's way—and in addition thereunto guns, armour plates, and various other things are made by processes of which the integral factor is a very slow cooling which cannot possibly be expedited.

Dummy Warships.

One of the German newspapers published in New York has come out with a tale about old ships being bought by the British Admiralty and converted into dummy warships. Whether true or not there is nothing novel in the idea. Apart from the familiar dummy guns which figure so largely on modern battlefields, the dummy warship is quite a classical idea.

It has not proved particularly useful in the past—unless the story be true that Russian cruisers took a group of dummies at the Pescadores to be Togo's main fleet.

In these days of submarines, however, there may be more possibilities in dummies than in the past, as though surface detection of the deception is probable in most atmospheric conditions, a good deal of uncertainty would prevail through a periscope. On the whole we may not feel ungrateful to the Germans for suggesting the idea.

General Matters.

To "Constant Reader," "T. K.," "L. M. B.," "A. L.," and others. I regret inability to refer to the question raised. The Admiralty prefers reticence, and in matters of this sort the Admiralty is necessarily the best (and the only) judge. I am quite unable to agree with the criticisms of Admiralty policy. Critics of it, I think, totally fail to realise the magnitude of the task with which the Admiralty is faced.

With reference to the series of short histories published by the *Encyclopædia Britannica*, reviewed in these columns recently, we regret that by an error the publishers were wrongly named. The volumes are published by the Encyclopædia Britannica Co., by permission of the Cambridge University Press, and not as stated last week. It may be stated in passing that they embody the history of the countries concerned in the war in a form and compass that is unobtainable from any other source, and will be found particularly useful by students of the war.

THE political causes which have led up to the present war are briefly summarised in *The Origins of the War*, a two-shilling volume by J. Holland Rose, published by the Cambridge University Press. Beginning with the Anglo-German rivalry of 1875-88, the author traces the development of the present situation from the world-policy of Germany, the Morocco trouble, and the Baghdad railway, the unhealed sore of Alsace-Lorraine, and the Far Eastern question. It is an able study of the principal problems of modern international transactions and German aims.

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THE AEROPLANE ON THE OFFENSIVE.

A POTENT QUALITY HITHERTO UNRECOGNISED.

By L. BLIN DESBLEDS.

NOTE.—This Article has been submitted to the Press Bureau, which does not object to the publication as censored, and takes no responsibility for the correctness of the statements.

IT is with a deep sense of responsibility, and after very mature consideration, that this article is written. It will be a matter of considerable regret if it does not attract, in a practical manner, the immediate attention of our authorities, and does not convince them of the value of the suggestions therein made. It is obvious that, in the present state of international politics, the writer cannot go into details to prove, by dotting the i's and crossing the t's, the soundness of his views; but it is hoped that his conclusion, based on general reasoning, will appeal to those on whom rests the very heavy burden of directing our military operations in the present conflict, inasmuch as it is contended that, by the employment, in a particular manner, of a weapon, now in our possession, it may be possible for the Allies to reduce, by many long months, the duration of the present war.

It is beyond contest that the worth of the aeroplane, at the front, has been demonstrated for certain purposes, such as reconnaissance work, dispatch-carrying, and other specific uses, which, as Sir John French recently told us, are suggesting themselves almost daily. *The most valuable way, however, in which the Allies could use the aeroplane is for offensive purposes on a comprehensive scale.*

A GUN WITH A 150-MILE RANGE.

In fact, in the hands of the Allies, the aeroplane could now be regarded as being equivalent to a powerful gun with a range of about 150 miles, a much more formidable weapon than the large Krupp gun which was so conspicuous in the first stages of the war. Besides having a range of from seven to eight times that of the Krupp siege-gun, the aeroplane, considered as an offensive weapon, would not, like the German monster machine, require any complicated preliminary installation for its proper working. The offensive aeroplane would almost always be ready, and its missile would reach its aim with a greater certainty than if it were fired from any existing long-range gun. Some figures, from actual experience, will prove the truth of these two statements.

In November and December, 1913, the French airman, Helen, flew during *thirty-nine consecutive days*, an average distance of 330 miles a day, most of the flights being made in tempestuous or foggy weather. Another French airman, Fourny, a few weeks before, had flown an average of 439 miles daily for *twenty-three consecutive days*. These performances, among others, show that, in the beginning of 1914, there were aeroplanes in existence which, almost every day, had a range of over 300 miles, or a radius of action over 150 miles, and this conclusion regarding the reliability of the flying-machine applies with even greater force at present, in the beginning of 1915. It is not too sanguine, therefore, to assume that we have now in our possession designs of machines capable of flying 150 miles over territory occupied by the enemy, there to discharge their shots or explosives, and then to fly back to their base.

The practicability of considering offensive aeroplanes as being equivalent to a 150-mile range gun having thus been established, it remains to show its efficiency.

EFFICIENCY OF THE OFFENSIVE AEROPLANE.

Since the beginning of hostilities the aeroplane, as we have been told in various official dispatches, issued either by the War Office or the Admiralty, has, on several occasions, been used for the dropping of projectiles, such as, for instance, on various airship sheds at Friedrichshafen, Cologne, Düsseldorf, and Brussels. The exact amount of success achieved by our airmen in their offensive operations, thus carried out, has never been officially published. It is not, therefore, possible to discuss the success or non-success of our airmen in these special offensive missions. Nor is it proposed to examine the question whether those airmen, who were detailed for those missions, had had a suitable training differing from that of ordinary military aviators usually employed on reconnaissance or kindred work to especially fit them for their offensive undertakings. But, apart from what little offensive aerial work has been carried out at the front since the beginning of August, 1914, there are available some figures, obtained in peace time, which will

serve as a guide in considering the efficiency, in actual practice, of the aeroplane regarded as the equivalent to a 150-mile range gun.

Towards the end of 1912 the airman Gaubert piloted an aeroplane in which Scott, acting as bomb-dropper, dropped dummy bombs on a goal of a circular shape 33 feet in radius. Scott, who had been training himself for that purpose, dropped the "bombs" from a height of 820 feet, and he succeeded in dropping on the target 12 projectiles out of 15, thus securing an average of hits of 80 per cent. This feat was surpassed in the following year, towards the end of 1913, when the French Lieutenant Varcin, who had also undergone special training, dropped, on a pre-arranged date, from the same height of 820 feet, fifteen bombs on a target of the same radius, namely, 33 feet. Lieutenant Varcin succeeded in hitting the mark thirteen times, his average of hits being thus very nearly 87 per cent.

These figures speak for themselves. There is no long-range gun in the hands of the Allies, or in those of their adversaries, which, however well served, could secure a higher percentage of hits. It can, of course, be objected that at a height of 720 feet, from which the "bombs" were dropped so successfully, the aeroplane would, in actual warfare, be very much exposed to artillery and to infantry fire from below. This objection is well founded; but there is no reason why, with a sufficient amount of training, a large percentage of hits should not be secured from greater altitudes, especially on bigger targets. This would be the more attainable when one keeps in mind that, at a height of 720 feet, an aeroplane is more subjected to "tossing" and "pitching" on account of the wind eddies which exist near the earth's surface, than it would be at a height of from 2,000 to 3,000 feet, where the atmosphere is more steady. At an altitude of 3,000 feet an aeroplane, which of necessity, in motion, is practically immune from artillery and infantry fire.

It may, therefore, be concluded that, with sufficient and adequate training, an aerial bombardier can be formed who will render the aeroplane the equivalent of an efficient 150-mile range gun. It is not too much to ask for the adequate training of aerial bombardiers when constant practice is demanded from the artillery and infantry in order that they may be efficient. From information which the writer possesses it would appear that efficient aerial bombardiers can be trained very quickly.

EFFICIENCY OF PROJECTILES.

There is another important point to be considered in connection with the offensive aeroplane, quite apart from the machine itself; it is the efficiency of the projectile to be dropped from the aeroplane.

Let us consider, in turn, the weight of projectile an aeroplane can carry, the quantity which can be dropped at a time, and its possible effect. The weight of projectile an aeroplane can carry will depend, of course, on how far from the base it is required to be dropped. The greater the distance an aeroplane has to travel the greater is the amount of fuel and lubricant that has to be taken on board the machine, and, consequently, the smaller is the quantity of projectile that can be carried.

As regards the amount that can be dropped at a time, we have to guide us some experiments carried out at the French military centre of Chalons, by Captain Bousquet, who, from a height of over 3,250 feet, suddenly dropped from his machine a weight of 242 lbs., without the stability of the machine being affected in the slightest degree. The services which an aeroplane, carrying 700 or 800 lbs. of projectiles, can render, from the offensive point of view, can, therefore, be easily conceived by the reader, and need not be laboured.

The effect of the projectile from an offensive aeroplane would depend not only upon its nature but also upon its mass. It does not require very much imagination to understand the effect of bombs filled with some modern explosive and weighing 100 or 150 lbs. each.

Having thus established the value of the offensive aeroplane the writer proposes to discuss, in his next article, the especial importance of a strong aerial offensive in the present war.

ON THE COLOURS OF UNIFORMS AND BRODRICK CAPS.

By COL. F. N. MAUDE, C.B. (late R.E.).

THE subject of the colours of uniforms is by no means novel, and was discussed by our ancestors almost as widely as it is to-day.

On the whole they found a very practical solution, rendered possible by the fact that in those days there was a distinct and radical difference between the duties of light infantry and of the line. The line did the actual shock of battle work, the light infantry or rifles the preparatory skirmishing, mostly in broken or wooded ground, and every country solved the problem of invisibility to suit its prevailing tone. Thus, Lord Amherst in America, about 1758, clad his light infantry in "nut brown," an excellent colour for the Canadian woods. In Germany, whence came the "rifle" or "jäger" regiments, a dark green suited the shadows of their pine forests better, or was thought to do so.

In the Peninsula, with few trees but much red and dark ochre rock and mountain, our brick-red tunics were particularly good, and green not in much favour. The Duke of Wellington, when asked his opinion as to the colours of uniforms, said that in his experience he had not found it a matter of much importance, but that it was essential under all circumstances that each army should show a clearly-marked difference of profile in its headdress against the skyline; and a little reflection will show how sound this reasoning was.

But in these later days we have forgotten the Duke and the wisdom of our forefathers, who often spent more years at the front than we spend months at the manoeuvres, and when we adopted the "Brodrick" cap (it was not Brodrick's at all, by the way) it looked to me as if we had attained the very nadir of our imbecility, for both Germans and Russians, in their flat-topped forage caps, showed precisely the same silhouette against the sky as our own, and as we wore nearly the same-coloured greatcoats, it seemed impossible to conceive how mistakes could be avoided.

Fortunately, the Germans elected to stick to their "Pickelhaube," or spiked helmet, on service, so that the matter of the caps has about righted itself, but there have been many regrettable incidents, I am told, due to the similarity of tone in our clothing.

The truth is that the whole question about "colour" has never received any scientific attention at all from the people responsible for our Army clothing. We took to khaki because in India and South Africa we were not only operating in a country with which it blended easily, but our fighting was almost entirely of light infantry character, i.e., in open order, in small bodies, where concealment is the essence of the whole problem.

In France and Flanders the war is of a totally different

character, where the great decisions which depend on the co-operation of artillery, infantry, and on the control the staff can keep of the movements are the chief things that matter, small skirmishes being only a temporary condition that will now pass away as the weather improves.

In these big operations the essential is that the gunners should be able to watch the infantry closing on the enemy, and support them with fire, over their heads, to the very last moment possible.

This is why the French never would abandon their red breeches as long as a certain old artillery general lived. Like every other nation, they had played with the question for years before the war broke out, and numerous reports had been presented from the infantry advocating various shades of greeny-greys and khakis, but he struck his pen through every one of them, pointing out in very direct language that if he could not see their little red breeches (but he used a coarser word) how the — hell was he to know when to cease firing in support!

He died about three years ago, and, as is generally known, a new invisible colour was approved by the French just before the war, but too late for its introduction, and it is fortunate indeed that this was so, because it is now becoming quite apparent, especially to English onlookers, that for this same reason the little red breeches are proving worth thousands of lives to our Allies.

An English artillery officer describes the attack on Verdun the other day as a "dream," the co-operation of guns and infantry was so perfect. The gunners could see the red legs twinkling ahead of them, and kept up such a storm of shrapnel over their heads that the enemy could not see to take aim. The shells kept raining in on them till the last twenty-five yards (he said) had been reached, then the guns ceased, and before the Germans could look up to see what had happened the French were upon them with the bayonet, and the place was carried.

Similar accounts have come to me from other sources during the earlier phases of the war, and I feel perfectly satisfied in my own mind that where all other conditions have been so nearly balanced, this last factor, the power of covering the infantry advance for a couple of hundred yards more owing to their visibility, has just turned the scale in favour of the French infantry.

Generally their success has been attributed to the 75mm. gun. It is, in fact, an excellent gun, but at these ranges all modern guns are so nearly perfect in accuracy that there is nothing to choose between them. Where the French score is in the perfect co-operation of the guns with the infantry which they have been able to attain.

CORRESPONDENCE.

"MINE AND TORPEDO NET DEFENCE."

SIR,—It is by no means surprising to learn that Sir William White combated Colonel Maude's suggestions for the conversion of battleships into diving-bells, seeing that as a practical naval architect he must have been well aware of the general impracticability of any such proposals.

The protective deck or decks of the modern vessel of war possess three functions:—(1) To keep out shot and shell from the engine and boiler rooms, from the magazines, and from the vital portions of the ship's interior economy. (2) To give lateral strength and stiffness to the general construction of the vessel. (3) To seal hermetically, as far as it may be possible, all lower compartments from the inrush of water consequent upon the breaching of the bottom by the explosion of torpedo or mine.

These decks, however, for the ordinary working of the ships, are pierced by a large number of openings, e.g., engine and boiler room hatchways, funnels and funnel-casings, ash-hoists, shell and ammunition lifts, ladderways and hatchways for the passage of the crew, etc., etc., and it is obvious that in proportion to the number and magnitude of these openings, the principle of the diving-bell must disappear; and no naval architect who has had experience of fitting air-locks to boiler rooms, worked under forced draught, would desire to multiply or extend these cumbersome and clumsy contraptions to other compartments of the ship. Colonel Maude writes as a Royal Engineer and inventor, but I think he scarcely realises the extremely narrow limits of space and

weight within which the naval designer is compelled to work. The art and mystery of battleship design may be compendiously if crudely defined as the effort to squeeze a quart into a pint pot—a task of proverbial difficulty.

Colonel Maude writes lightheartedly of increasing the depth of the double-bottom from 3ft. to 5ft., not realising that the draught of these vessels has to be calculated within inches, and that every cubic foot of air space added at the bottom of the vessel tends to send up the centre of gravity of the ship, to shorten the height of "meta-centre" (that theoretic pivot of the vessel's pendulous suspension), and generally to disturb the calculations of stability upon which the safety and seaworthiness of the ship depend. In these directions I fear that the problem of safeguarding a ship against mine or torpedo attack has already been mainly thrashed out, though probably still something remains to be done in providing controlled water-communication between the several transverse and horizontal compartments of the ship.

Few vessels go down by direct vertical submersion, but when one or more side-compartments have been breached the inrushing water upsets the stability and trim of the vessel, till, with more or less rapidity, it turns turtle and goes to the bottom.

Apart from the active defence of a battleship by gunfire or torpedo boat patrols, and beyond all question of constructional design, there still remain to be explored the possibilities of net-defence, which in my judgment have in recent years been grossly neglected by our naval authorities. The

explosive effect of a mine is intensely local, and if only it can be kept twenty or thirty feet from the side of the ship, its destructive energy becomes practically innocuous.

Admirals and other naval experts often object to net-defence on the ground that it is cumbersome and difficult to handle, that it is, under modern conditions, largely ineffective, and that it tends to interfere with the speed and manœuvring qualities of the ship—but in reply it may be said that these nets and their supports can easily be designed so as to become completely effective for the purpose proposed, and that it is better to lose a few knots' speed, notably within the narrow confines of the North Sea, than to lose the vessel itself; and there can, I fear, be little doubt but that we shall continue to be horrified by news of fresh naval disasters, and the still more irreparable loss of gallant lives until our naval authorities take into more serious consideration this most pressing problem of Net-Defence.—Yours faithfully,

ARNOLD F. HILLS, M.I.N.A.

Hammerfield, Penshurst, Kent.

RUSSIA AND AVIATION.

To the Editor of LAND AND WATER.

SIR,—Having lately come over from Russia on important business which has kept me very occupied, I was fortunate enough in a spare moment to read Mr. L. Blin Desbleds' article on "The Airship in Naval Warfare," published in your esteemed journal of January 9th, 1915.

With all due respect to Mr. Desbleds, with whom I am somewhat acquainted through correspondence, I cannot agree with his views on the subject treated by him in the before-mentioned article.

Having had intimate experience of dirigibles or airships for many years I may state that the capability of the airship to remain stationary over any given point is extremely problematical. In practice I have never seen it done in average weather or even under the ideal conditions of the White Nights of Northern Russia, better conditions than which it is impossible to find, except perhaps on the paper of the mathematician.

When attempting to keep an airship stationary over any given point, instead of doing so the airship, even when on its best behaviour, drifts slightly about in every direction, without any definite wish of its own as it were, the toy of every phenomenon of the element in which it floats, and not even superior management of the vessel will fully counteract this behaviour, which those having deep practical experience of airships know to be sufficiently aggravating and disconcerting when endeavouring to do with accuracy anything requiring this quality of remaining stationary, which the airship is generally supposed to possess, such work can be better carried out when the airship has a certain amount of engine-driven, accurately-gauged headway!

Under the general term of aeroplane, it is apparent from Mr. Desbleds' article that he compares the small type of aeroplane generally known with the modern airship, quite ignoring the existence of the large 400-h.p. to 900-h.p. aeroplanes, an equally modern development, which Russia, keeping its own counsel, has brought to a high pitch of perfection during the past two or three years, and with which I have had also much to do.

The comparison made by Mr. Desbleds is unfair, as these large aeroplanes are as superior for general utility to their small sisters as the modern airships are to the early smaller airships.

These large aeroplanes can be made so to hover as it were over any given point, as to attain very similar conditions to those obtained on an airship having a very slight amount of headway as aforesaid, for periods of time amply sufficient for their operators, with the modern perfection of instruments, to fulfil with accuracy anything which previously it has been supposed could better be accomplished on airships, when trying to make them remain stationary over a given point.

These large aeroplanes are fitted with four engines, and have a speed of seventy miles per hour, and can be made to fly non-stop, whenever so required, for twelve hours, and they can be as easily navigated at night for such periods as in the daytime. They have ample crew accommodation, and carry an installation of wireless telegraph with a range of not less than 200 miles, searchlights, machine guns, bomb-dropping apparatus, and photographic laboratory.

Such aeroplanes have proved their complete superiority to airships, and their use during this war has brought great benefit to Russia, and the sooner Great Britain has such machines the better.—I am, Sir, yours truly,

C. J. H. MACKENZIE-KENNEDY.

Member of Technical Committee,
Imperial All-Russia Aero Club.

33, St. Swithin's Lane, London, E.C.

PROTECTION AGAINST SUBMARINES.

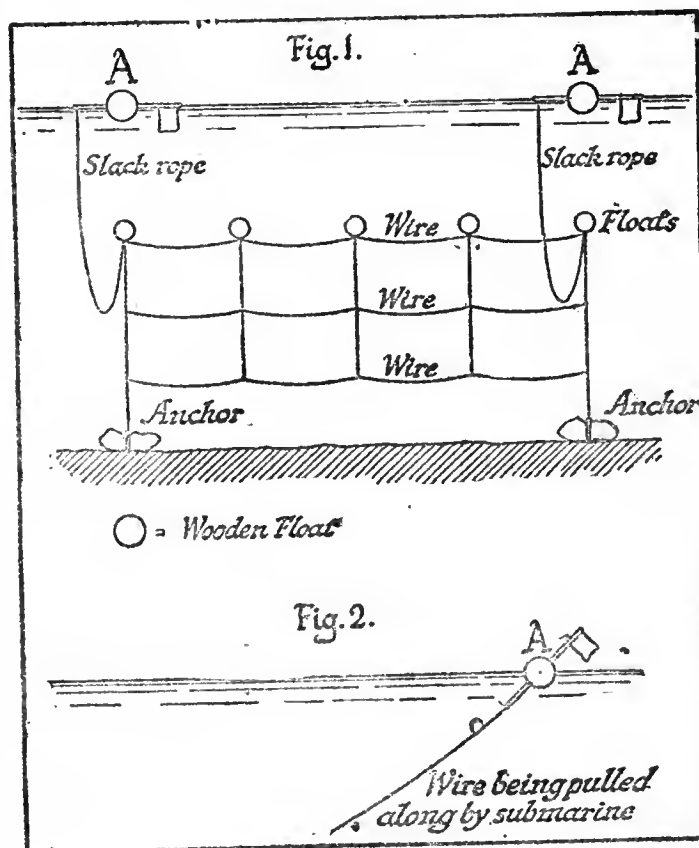
To the Editor of LAND AND WATER.

DEAR SIR,—I enclose a memo. *re* submarines. I have already sent the substance of it to the Admiralty, but it was mixed up with other proposals, and not so clearly put as it now is. They do not consider the idea practicable. I have asked them whether I may communicate my ideas to the Press, as some others have done, and they agree.

I should be extremely glad if you would (in LAND AND WATER) give, briefly, your ideas on the proposal. I know you take great interest in such matters. Various similar ideas were commented on in *The Times* in November.

1. Main Idea.—The idea is to arrange so that a submarine, in fairly shallow or confined waters, shall notify its presence and its whereabouts. It is proposed to lay down wires which the submarine will touch and break or displace. Since the vertical height from keel to top of periscope is considerable, a system of horizontal wires would be most efficient.

2. Wires.—To be laid horizontally one above another, and at such intervals—say 25 feet—that a submarine must strike one or other. To be suspended at suitable intervals by cords or wires from floats. To be anchored at the ends and at other points if necessary. See sketch Fig. 1. Length of a wire not to be so great as to seriously retard the submarine, otherwise the latter would become aware of the fact that it was entangled and might go astern and shake off the wire.



3. Indicator Floats.—A submarine striking a wire would double it up and carry it along. Connected with each end float there would be an indicator float (A, fig. 1 and 2), which would remain on the surface and move along in wake of submarine and show a flag. A watching destroyer could follow. At night the float could carry a light or be coated with luminous paint.

4. Remarks.—Wires could be laid across mouths of harbours, etc., or around selected areas of sea (e.g., areas near Belgium when ships shell the coast), or even right across the Straits of Dover. The south part of the North Sea is only about 120 feet deep. The wires would be in lengths, each overlapping the next. They would be more simple than a system of nets such as has been proposed. In some cases it might be suitable to attach the ends of the wires strongly to the shore. The breaking of the wire might interrupt an electric current, and so signal the presence of the submarine. Of course ships crossing the wire would have to stop engines and slow.

E. S. BELLASIS, M.I.C.E.

30, Lansdown Crescent, Cheltenham.

EXPLOSIVES.

To the Editor of LAND AND WATER.

SIR,—Mr. Jane's statement "that Germany is ahead of the rest of the world in the matter of high explosives" seems to be well founded (at least, so far as we are concerned), and to constitute the explanation of several apparently isolated facts. I venture to put forward some suggestions and to ask some questions.

(1) Is this not probably the explanation of the effect produced by the German siege guns and Jack Johnsons? The debated question of the size of these guns is not the important one, but the explosive. We hear nothing of such devastating effects being produced by our shells.

(2) The pictures recently published of the ruined forts at Tsingtau suggest that the Japanese possess an equally powerful explosive. The fall of Tsingtau seems to have surprised the Germans as much as that of Namur did ourselves. Further, a rumour declares that the Japanese have reported our torpedoes to be of no use, that is (I take it), comparatively speaking. Could we not get some aid from our ally?

(3) Does this throw any light on the comparative rapidity with which the *Good Hope* and *Monmouth* were destroyed once the German armed cruisers got the upper hand? The *Good Hope* blew up a little more than an hour after firing began, and the *Monmouth* sank within a little more than two hours. On the face of it the odds did not seem to be so hugely against us. The battle at the Falkland Islands was of much longer duration.

(4) What effect may this superiority in explosive shells and torpedoes be likely to have on the great naval battle which will take place when the German Fleet has completed equipment, trained the reservists and new recruits, and effected a sufficient attrition of the British Fleet by mines and submarines? If it does. It is rather melancholy that after the experience of the Boer war we should have allowed ourselves to be caught again with an inferior armament and one which affects everything—shells, torpedoes, bombs, mines, and hand grenades. What are our chemists doing?—Yours,

H. J. C. GRIERSON.

THE LOSS OF THE "FORMIDABLE."

To the Editor of LAND AND WATER.

SIR,—I have been deeply interested in reading Colonel Maude's description of his idea for keeping fighting vessels afloat after submarine attack.

The reference to the "diving bell," which under the new name of a caisson bell is now of such practical utility in civil engineering works, very happily illustrates Colonel Maude's suggestion for lessening the dangers attendant on naval warfare.

There is, however, this difference between the diving bell and the warship. The diving bell rests on the ground at the bottom of the water, the weight of its structure being greater than the weight of the water which it displaces. The filling of a space in a warship with compressed air is intended to prevent it reaching the bottom—in fact, to maintain it at the surface. If the bottom of a caisson bell is, say, 30 feet below top water level, it will be necessary in order to prevent water entering the bottom of the bell to charge the bell with compressed air and maintain it at a pressure per square inch equal to the weight of a column of water 30 feet high and 1 inch square in section. The pressure of the air inside will then balance the external pressure of the water at the bottom of the bell.

Now, supposing when in this condition the bell is punctured—say, at a vertical height of 4 feet from the bottom—the balance in pressure between the air inside and the water outside is broken; for at the point of puncture the head of water is reduced to 26 feet, whilst the pressure of the internal air at this level is still equal to a column of water having a head of 30 feet. Air will now escape through the puncture and water will rise in the bell until it reaches and covers the orifice. The remaining air will then be locked in the upper part of the bell, and water will cease to enter. If the bell had been constructed with a watertight bottom, and instead of being punctured it had ripped open—say, from the bottom to a vertical height of 4 feet from the bottom, the result would have been the same.

With considerable diffidence I would like to compare the punctured bell with the punctured ship, but wish it to be quite understood that I make no pretence to a knowledge of marine engineering, and if my comparisons are at fault I welcome corrections.

I believe that a ship floats because the weight of water which it displaces is less than the weight of the ship itself, and that when a ship fills with water to such an extent that this difference in weight ceases to exist the balance of buoyancy is lost and the ship sinks.

Imagine a ship to be constructed with an absolutely air-tight deck, and every part of the exterior of the ship below the deck also of air-tight construction. Assume further that the bottom of the ship is 30 feet below top-water level, and that the whole of the space below the deck is filled with compressed air at a pressure equal to the external head of water—in fact, under the same conditions as the caisson bell before referred to. If such a ship be punctured or breached may I not reasonably conclude that she will fill with water until the top of the breach is well covered? This filling with water will decrease the difference in weight between the water displaced by the ship and the weight of the ship, and if to such a degree that the balance of buoyancy is lost the ship sinks.

Now if my conclusions with regard to the ship are correct then I think answers to the following questions are required before the practical utility of compressed air as a means for keeping a vessel afloat after submarine attack can be demonstrated:—

I.—Is it practicable for the space below an air-tight deck to be filled and maintained with compressed air at a pressure of, say, 15 lbs. per square inch without lessening the fighting power of the ship or the crew to an appreciable extent?

II.—In the event of submarine attack would the explosion so damage the ship as to render the deck and the exterior of the ship below the deck and above the highest point of the breach no longer air-tight?

III.—Is the highest part of the breach caused by submarine attack at such a level that, under all conditions, sufficient space is left between the highest part of the breach and the air-tight deck to preserve the balance of buoyancy.

—Yours faithfully,

JOHN CHADWICK.

OILSKINS AND RUBBER BOOTS.

To the Editor of LAND AND WATER.

DEAR SIR,—The response to the appeal which I made for oilskins and "gum" boots through the medium of your paper, has been most generous, but further efforts are needed to collect the large number (4,000) asked for by the Commandant of No. 1 Base (France). The receiving Depot is at 8, Beauchamp Place, Brompton Road, S.W., where all gifts are gladly acknowledged. Letters may be addressed to Mrs. Bruce Williams, 22, Alexander Square, S.W.—I am, Sir, yours faithfully,

22, Alexander Square, S.W.,

M. A. WILLIAMS.

BURKE'S PEERAGE (1915 edition), published by Messrs. Harrison & Sons (Bookselling Dept.), 45, Pall Mall, London, is now to hand. This valuable work of reference should be in every library.

As evidence of the fact that "Burke" is corrected efficiently and right up to date we notice that the following items appear in the text of the work:

The death of Sir John Barker, December 16th, 1914;

The death of Sir H. F. Grey, December 17th, 1914;

and the Addenda brings the happenings up to December 19th.

Mention is also made in the text of the honours given by the King in France, i.e., The Order of Merit to General Sir John French, The Garter to the King of Belgians, The Bath to General Joffre, and The St. Michael St. George to other French Generals, and all the D.S.O.s and V.C.s conferred up to December 19th.

The deaths of three Baronets who had long been lost sight of are also now recorded, i.e., Sir Henry Burnaby, 5th Bart.; Sir Richard H. K. Farmer, 5th Bart.; and Sir George Compton Reade, 9th Bart.

The price of the volume is £2 2s. net.

LOOKING BACKWARDS.

Readers of the special articles appearing in this Journal on "The War by Land and Water" will doubtless wish to retain in correct rotation this remarkable series of articles by HILAIRE BELLOC and FRED T. JANE. We have, therefore, prepared special cloth binders to hold the first thirteen numbers, at a cost of 1s. 6d. each.

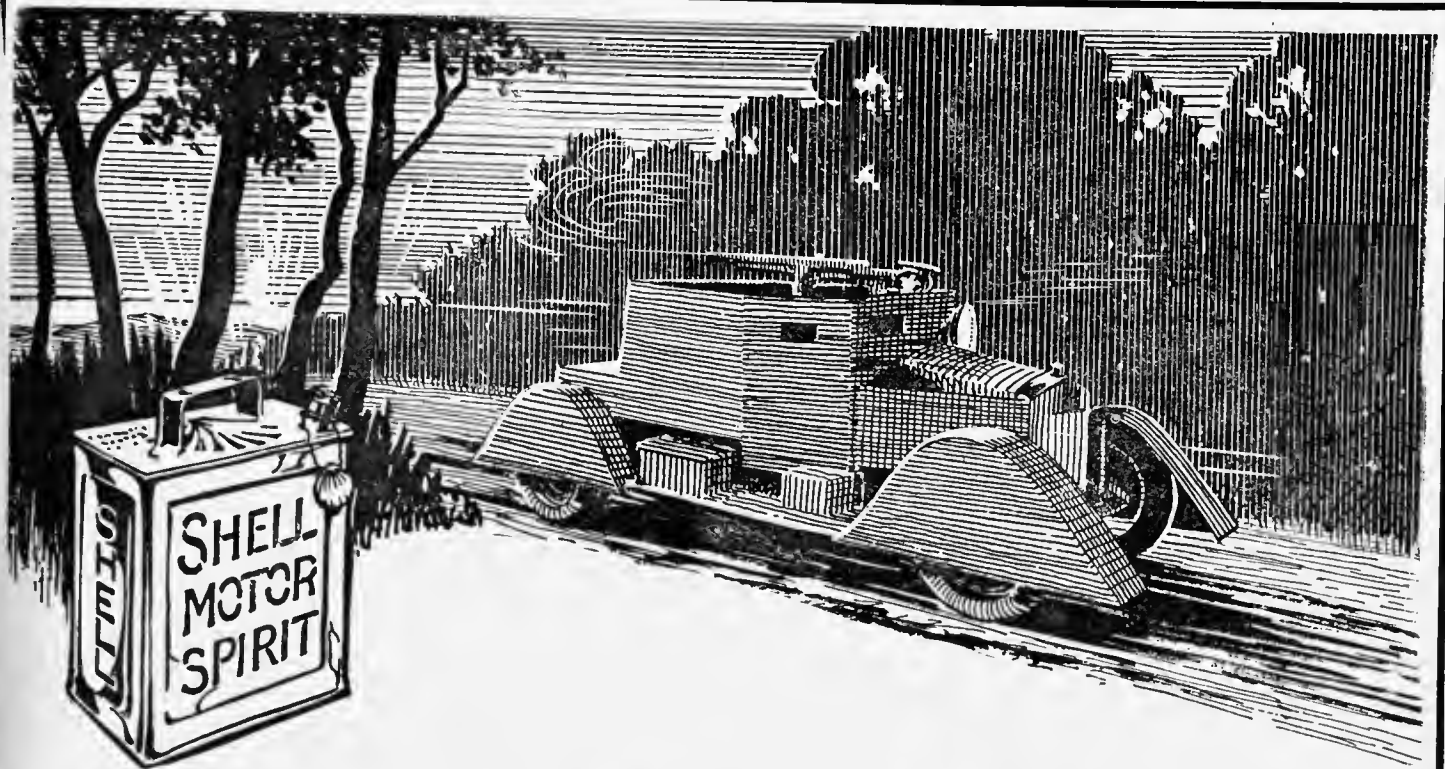
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THROUGH THE EYES OF A WOMAN

How to Live

THE lot of the housekeeper does not seem likely to become any easier as time goes on. Considering the present state of affairs during the past five months prices have not mounted as rapidly as they might have, but of late they have shown a distinctly upward tendency. And it is unlikely that these will decrease in the near future; instead, we must make up our minds to expect the reverse. Bread has gone up in price, eggs are dearer, butter shows at least an additional penny on the pound, and even such a modest commodity as kindling for the domestic hearth shows a shrinkage of quantity, the bundles of firewood being palpably smaller.

As a matter of solid fact, we should consider ourselves fortunate that things are not worse than they are, and nobody at present has much to grumble at so far as the supply of their creature comforts is concerned. Many of those creature comforts, however, are going to cost them more, and those who, like Mrs. Gilpin, are of a frugal mind are wondering where and whence they can economise. And this is a point which can very fairly puzzle the brains of the cleverest of women. The really clever housekeeper knows that economy, like cleverness itself, must be disguised if it would achieve success. There is nothing more damping to the spirits than the clever person who is yet stupid enough to brazen his cleverness. There is nothing more chilling in the home than a "drawing in" atmosphere. How to avoid this impression, and yet effect all necessary economy, is the problem of the day to all housekeepers.

The Means to the End

Those who really wish to solve the problem in the most practical fashion can best do so by drawing up a summary of their daily routine and studying it. Few things are more illuminating than a list of this sort. We see our mode of living down in black and white, and can gather at a glance in what direction money can be saved. This needs some very clear thinking, because there are certain ways in which money must *not* be saved, however harsh may be the demands upon our purse. As good patriots it is incumbent upon us to support the organisations working for the good of our soldiers and sailors. Looking farther afield, we should stretch forth a hand of comradeship to our Allies, giving help wherever we can, and thus promoting that feeling of oneness which is amongst the foremost assets of the Allied cause. Then there may be cases of want, only indirectly caused by the war, but demanding our aid more forcibly now than at any other time. For, strange though it may seem in these days of terrible strife, there has yet never been a time when the brotherhood of man should be more apparent. We are all members of one large family fighting in a common cause, and the strongest must help the weakest or else both family and cause will perish in the ordinary course of events. All these claims upon us, then, must be generously accepted if we would do our share of the work.

No better term has ever been coined than that of "personal expenditure." Expenditure is personal; so personal, indeed, that nobody can regulate it but ourselves. For this reason it is well nigh impossible to lay down any hard and fast rules about the spending of money. People must cut their coat according to their cloth, and it is only the owner of the coat who can judge the true value of its material and the particular way in which it should be cut to suit him. Once this is acknowledged, however, there still remains something that all can banish from their daily life with the best economical results. If we made up our minds to rigorously bar all superfluities and diligently examined ourselves as to the exact meaning of the word, how much more simple would our lives become. It is the easiest thing in the world to waste time, money, and energy on the superfluous; but we have reached a point when mistakes of this sort will be swiftly punished, and it behoves us all to beware.

A Foe to Fight

There is an enemy to be fought in the home as well as abroad, and it is quite as insidious a foe. Its name is Waste. Napoleon once said that stupidity was worse than a crime, but in this case we must quote the reverse. Waste has always been stupid, but at this present time it is criminal. There is a legitimate output for every penny of our incomes,

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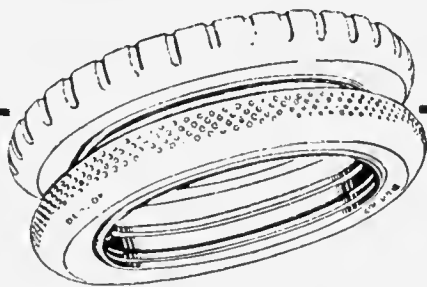
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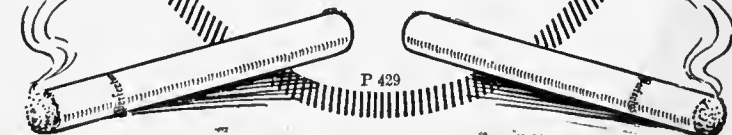
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THROUGH THE EYES OF A WOMAN

and we must not shirk its responsibility. It is a wise woman, therefore, who makes uncompromising warfare against waste and finds it her business to see there is no such thing in her household. It will not be a very easy fight to win, but each day that passes shows how necessary it is to wage.

Some people, in order to prevent a leakage in household expenditure, are putting both themselves and their servants on a fixed weekly allowance. A definite sum is allowed per head each week, and the vexed question of why the baker's book is double that of the preceding week is never raised. Why the housekeeping books should fluctuate for no special reason is always an unsolved problem, but this plan certainly prevents it arising. Most things, indeed, at the present day seem to resolve themselves into the principles of mathematics, and for the idealist and dreamer they are hard times indeed. It is only the practical mind that delights in the ruthless reduction of everything to pounds, shillings, and pence; but it is the practical mind that tides over a financial difficulty, and housekeeping is nothing nowadays if it be not common sense writ large.

ERICA.

CORRESPONDENCE

5TH BATT. RIFLE BRIGADE DEPOT, MINSTER,
ISLE OF SHEPPEY

To the Editor of LAND AND WATER.

SIR,—I should be extremely obliged if you would kindly insert the following letter in your paper. There must be hundreds of old garden and deck chairs stored away which would be of the very greatest value to our soldiers for their wooden buildings, which are being built for winter quarters. Many of our soldiers have neither mattresses nor chairs, and have to sit on the wooden floors, which is very trying after long marches.

Would any of your readers who can do so very kindly send to—

ERIC GILBEY,
5th Batt. Rifle Brigade,
Minster, Isle of Sheppey.

If possible, each county should supply its own camps



CALCIUM carbide, hitherto almost entirely a foreign production, can now be obtained of English manufacture in considerably better quality than heretofore. Our illustration shows the Thornhill factory of Messrs. Chas. Bingham & Co., manufacturers of all-British carbide, with no less than twenty-three points in the United Kingdom at which a stock is maintained for the convenience of consumers. The quality of the product may be estimated from the fact that one of the largest steel firms in the world insists on "Thornhill" carbide, and will not use the foreign product.

MESSRS. BRYANT & MAY, the well-known match manufacturers, have designed and put on the market an exceedingly useful metal case, which takes the ordinary matchbox and protects the contents and the striking surface from damp or any other injuries. The case is neat and workmanlike in appearance, and should win favour among those who have occasion to use matches in exposed positions. It would be a useful addition to a smokers' outfit in the trenches at the present time.

THE inventors and makers of the medicated gelatine leaves referred to in this issue are Savory & Moore, of 143 New Bond Street.

IN these exceptional times much importance and interest attaches to the publication of that well-known annual, "Sutton's Amateur's Guide in Horticulture," a copy of which for 1915 has just been received. In an address to their customers Messrs. Sutton direct attention to the vital necessity of producing at home foodstuffs of all kinds on as extensive a scale as possible, and those who have land suitable for raising garden crops will no doubt be alive to the advantage of cultivating every available yard, not only to meet individual wants, but to provide against any national emergency.

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The County Gentleman
AND
LAND & WATER

Vol. LXIV

No. 2751

SATURDAY, JANUARY 30, 1915

[PUBLISHED AS]
A NEWSPAPER.]

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MAJOR J. H. S. DIMMER, V.C.

This officer served his machine gun during the attack at Klein Zillebeke until he had been shot five times—three times by shrapnel and twice by bullets—and continued at his post until his gun was destroyed. For this act of bravery he was awarded the V.C., also the new decoration—the Military Cross.

"Not once or twice in our fair Island story, the path of Duty was the way to Glory."—*Tennyson.*

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THE PART PLAYED BY RAILWAYS IN MODERN WARFARE

By "A.M.I.C.E."

ALTHOUGH the great war now raging has with some justice been called a "motor war," owing to the enormous use made of motor transport, it might even more truly be described as a "railway war." Although motor transport has played a great part in facilitating the movements of vast armies, in feeding the large masses, and in providing them with stores and ammunition, the railways have been and continue to be the chief means of transportation.

The Franco-German War of 1870-71 was really the first great conflict in which railways became an important element of strategy and tactics, and since that date there have only been two land campaigns of first-class importance in which they were used to a large extent, namely, the South African and Russo-Japanese wars. Unfortunately, both campaigns were conducted in sparsely populated districts provided with very few railway facilities, and as these wars were fought outside Europe but little attention was directed to the work of the railways.

A Commission of railway investigation, instituted by the French Government during the armistice in 1871, stated that a railway is a docile and powerful instrument which should be used with intelligence. Its numerous and disciplined staff is accustomed to obeying precise orders emanating from one authority, and is, of course, completely bewildered when contradictory instructions are sent in from different quarters at the same time. The Commission reported that this important element of useful working had been completely overlooked in the Franco-German War, and this was proved by numerous facts. In consequence of different orders, counter orders, too frequent requisitions from military authorities causing fatal delays and blocking up the sidings, fighting between generals for priority of trains, etc., the French railways were hopelessly crippled during the best part of the war. On January 15, 1871, 6,500 vans were immobilised for such reasons at a single spot on the Paris-Lyons-Mediterranée Railway. Inexperience of the practical working of the railways for military purposes resulted in the accumulation of abundant provisions at one place, while at other places the armies lacked everything. During the march of Bourbaki's army an obstruction in the station of Clairisal resulted in 15,000 men remaining eight days and nights in the cars with food for three days only. The Commission reported that the capabilities of railway transports are practically indefinite and are only limited by the amount of rolling stock available. The Eastern Railway of France transported on an average 12,000 to 15,000 men per day, with cavalry, artillery, and war material, the trains following each other every hour or half-hour. Each train usually contained 1,200 men or a battery of artillery. Vinoy's army—50,000 strong, with artillery—was transported in thirty hours, while on November 22, 1870, 100,000 men were concentrated at le Mans in three days by three different railway lines.

The French admitted that the Germans made more efficient use of the French lines than they did themselves, because the German railways were being managed by a Government Commission which had absolute control over all the different railway companies. This arrangement is, to a certain extent, the same as that instituted at the beginning of the war in Great Britain.

During the war of 1870 the ordinary passenger and goods traffic of the German railways dwindled to practically nothing, the principal business consisting in moving troops, forwarding siege guns, ammunition, convoys of provisions and stores, and in bringing back from France many numerous trains of sick and wounded, as well as prisoners of war. Of the French army captured at Metz 70,000 were sent off by railway through Saarbrücken, whilst 85,000, with an escort of 16 for every 100, were forwarded by rail to Germany via Trier. Passenger carriages were requisitioned and furnished by every German railway company in proportion to the means at its command, and five trains, with 2,000 prisoners in each, left Metz every day. Within two weeks after the declaration of war the Germans laid 10 miles of railway on the right bank of the Rhine, opposite the fortress of Germersheim, to Graben, near Bruchsal, in order to form a junction from Worms to Germersheim. This short line proved of great strategical importance, and was found of immense use for the rapid conveyance of troops. With the fall of Toul and Metz the Germans obtained uninterrupted communication between Germany and Nanteuil, about 46 miles from Paris.

The French destroyed the railway bridge over the Marne, and consequently the Germans had to send their siege guns from this point to Paris by road. The Eastern Railway Company of France suffered most at the hands of the Germans, as this railway was entirely in their possession. Its loss in rolling stock was, however, small, as most of it was brought safely to the main station in Paris before the German advance.

One of the results of the war of 1870 was the very important arrangement carried out between the English and German Governments, by which the English overland mails to India and Australia were diverted from the French route and conveyed through Germany to Munich, and then over the Brenner Railway to Verona, whence they passed through Italy to Brindisi and shipped to Alexandria.

Up to the present war railways in this country have never been called upon to handle such a volume of traffic as has been necessitated by the transport of the Expeditionary Force to France, and also in connection with the movements of Territorials and Kitchener's Army, but those familiar with our railways have always felt confident that at the critical moment the railway companies would not be found wanting.

In the South African War the London and South-Western Railway did admirable work. The Chairman of the Company stated that between October 20, 1899, and Saturday, February 3, 1900, there had been embarked at the Company's wharves at Southampton 3,244 officers, 114,933 men, 12,929 horses, 267 guns, and 997 military wagons, with 10,000 tons of stores and ammunition. This traffic was conveyed over the line in 592 special trains, and in no case was a transport delayed by the train service.

The following figures show the number of troops and material handled on specific days on the London and South-Western Railway. All this traffic was carried at a time when trade was excellent, and in no case was the ordinary public train service interfered with:—

Date, 1899.	Officers and Men.	Horses.	Guns.	Military Wagons
Friday, Oct. 20	4566 ..	16 ..	5 ..	38
Saturday, Oct. 21	5048 ..	103 ..	20 ..	89
Sunday, Oct. 22	4859 ..	524 ..	9 ..	27
Monday, Oct. 23	4255 ..	437 ..	5 ..	38
Tuesday, Oct. 24	1581 ..	272 ..	9 ..	41
Saturday, Nov. 4	3652 ..	344 ..	2 ..	8
Saturday, Nov. 11	2222 ..	6 ..	1 ..	5
Wednesday, Nov. 15	828 ..	406 ..	12 ..	42

The London and North-Western Railway also shipped a large number of troops from Liverpool and other places. The company brought them from various parts of London and the country. In connection with the South African War this company carried 62,071 troops, 126 guns and horses in 359 special trains without interfering with the ordinary traffic. Lord Roberts, in his report on the field transport, referring to the Railways Department, said that the difficult and arduous work performed by this department reflected the greatest credit upon all concerned. From Capetown to Pretoria is 1,040 miles, and Pretoria to Komati Poort is 292 miles more and, considering the enormous length of line to protect, it was a wonderful achievement to carry an army of 250,000 men with all their equipment into the heart of the enemy's country.

(To be continued).

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Hilaire Belloc

has written a fascinating article entitled "Can the Loser Pay?" and in it he tells, with his customary soundness and brilliancy, how, at the end of this present world-war, the conquered nation, beaten to their knees, will pay "through the nose" and continue to pay for years and years to come. Mr. Belloc throws a new light on the question of war indemnities and his splendid article is published exclusively in the current (February) number of

N A S H ' S

AND PALL MALL MAGAZINE

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THE WAR BY LAND.

By HILAIRE BELLOC.

NOTE.—This Article has been submitted to the Press Bureau, which does not object to the publication as censored and takes no responsibility for the correctness of the statements.

In accordance with the requirements of the Press Bureau, the positions of troops on Plans illustrating this Article must only be regarded as approximate, and no definite strength at any point is indicated.

THE WESTERN FIELD.

THE news from the western front in the course of the last week has involved no appreciable movement of troops. Indeed, the mark of all the last few days has been that throughout the whole field (by land) the campaign has been stationary. The line at Soissons stands just where it did, as does every part of the western front; even in Alsace, where very large German reinforcements have failed to take the wooded height of the Hartsmann Weilerkopf which overlooks Steinbach and Thann.

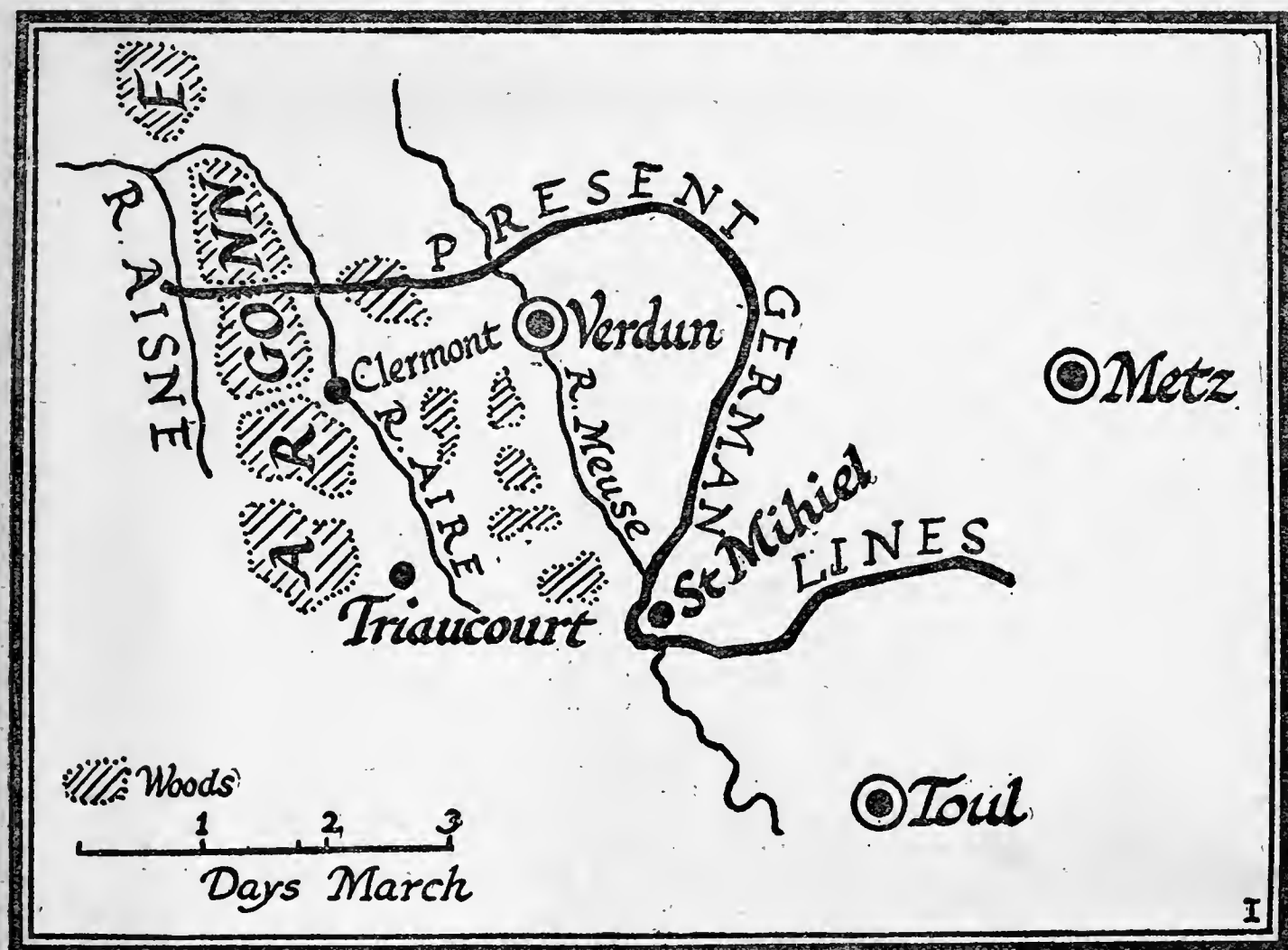
The real interest of the time is the approach of that moment—now not far distant—when the German Empire shall begin to put forward its new formations which are also its last reserves.

How these will be used, and where, are the main points upon which all speculation now turns,

clear that if ever he can bring large reinforcements of sufficiently good material for the action he should try in his first new offensive in the West to invest Verdun, unless some political folly attracts him to the mere name of Reims, as it attracted him to the mere name of Calais.

It is evident that a really successful offensive down the line of the Argonne would be the shortest way of closing the buckle, of which the wedge at St. Mihiel is the clasp, and to conceal the massing of men under modern conditions a great belt of woodland is perhaps the best opportunity.

In the same way the French, for their offensive, have already considered the Vosges and its forest. But the advantage of woods in concealing a concentration is set off by the disadvantage of woods as a field for attack. What seems conceivable is the use of such a belt as the Argonne for

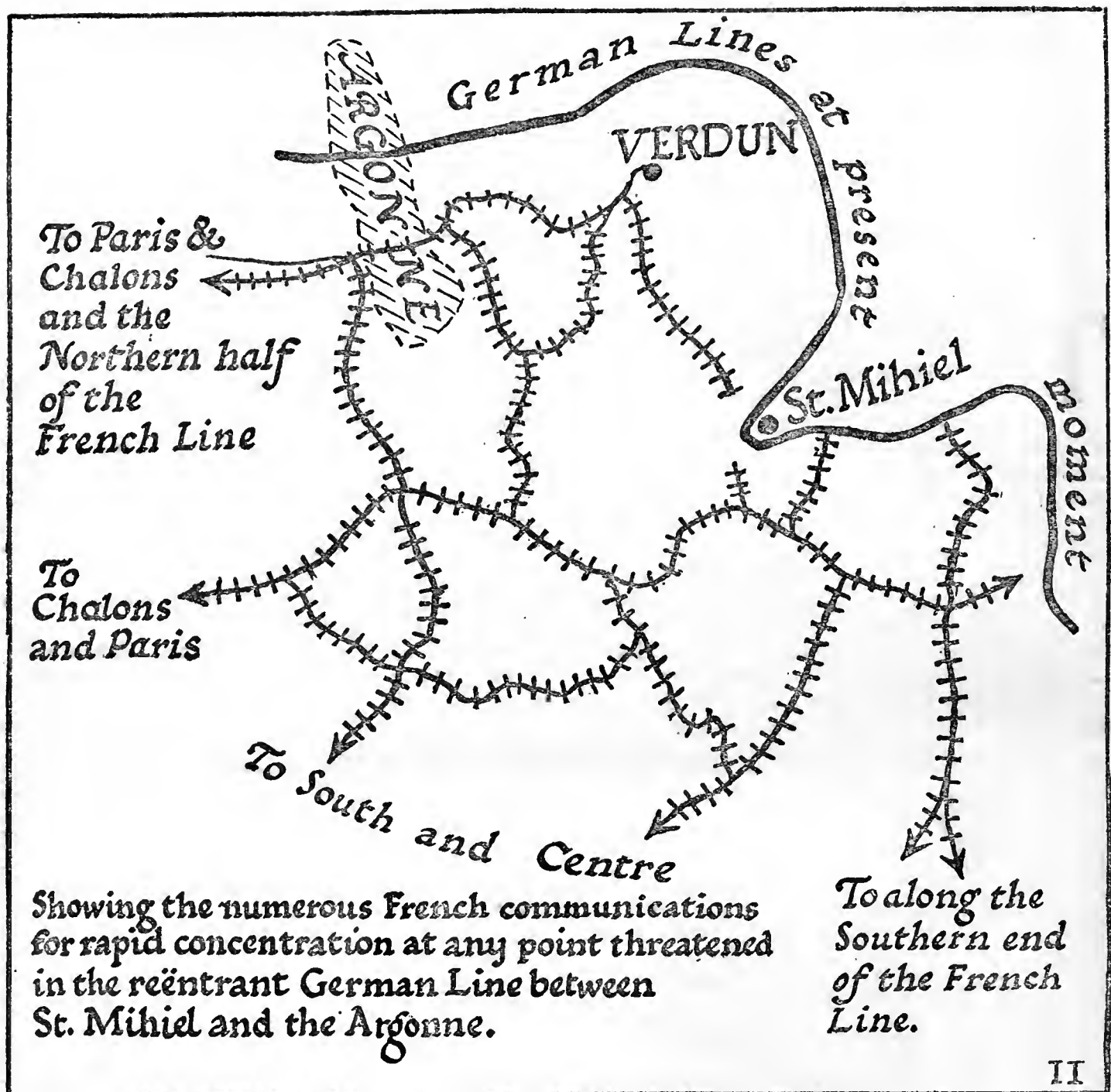


PLAN SHOWING THE SITUATION IN THE VICINITY OF VERDUN.

and obviously the most vital matter offered to our judgment.

I hope next week to have room for its discussion at length, meanwhile there is some interest in remarking the very active efforts the enemy continues to make in the Argonne, because it is pretty

concentration, and thence the delivery of an offensive stroke southward and eastward from it across the Clermontois, the fairly open land beyond Clermont and towards Triaucourt, that is, along the upper valley of the Aire. It is evident that this movement, if it is successful, will isolate Verdun,



and the isolation of Verdun would mean either the falling back of all the French line to the south of it or the exhaustion of the southern half of the French line in repeated attempts at relief. In either case such an investment would break the grip in which the Germans are now held on the west. It may be suggested, but it is only a suggestion, that the continued activity in Argonne is in preparation of such a move.

On the other hand, it is difficult to see how any concentration here could succeed against the rapid means of counter-concentration which the French possess immediately behind the German re-entrant angle. There is full railway opportunity for massing troops by the big double lines through Chalons and the other parallel line to Bar-le-Duc, and there are very numerous cross-lines, single and double, and for all movements within this angle the French have obviously the shorter line, for they are inside the concavity formed by the resistance of Verdun.

In connection with the resistance of Verdun there arises a point which has been put by more than one correspondent, and which may as well be dealt with here.

Why (it is asked) does Przemyśl, which is quite isolated from the rest of the Austrian forces, still hold out, and why (it might be added) is no effect produced by siege work against Verdun? Why does that fortress continue to impose a dangerous re-entrant angle upon the German line in spite of the fact that modern permanent fortification is, as has been repeatedly pointed out in these columns, since the lesson was learnt at the beginning of the war, dominated by modern howitzer fire? Liège fell in a few days, Namur in a few hours, Maubeuge in something over a week. What is the meaning of these apparently exceptional cases?

The answer to that question is that yet another German theory has been proved true. There is a method of defence (alternative to permanent fortification) which we know that Metz has adopted since August, and which we may presume that Verdun has, and Przemyśl as well, and this may be described as follows:—

Since the vulnerability of a permanent work consists almost entirely in its restricted area, since, that is, an enclosed fort with a known position upon the map can be destroyed by distant howit-

zer fire (which the guns of the fort with their flat trajectory do not dominate, and which with its long range and therefore large circumference of action the guns of the fort cannot easily search out), let the permanent fortification be abandoned and a series of trenches traced upon a perimeter larger than and exterior to the perimeter of the old forts, and let the mobility of heavy guns be organised as well as may be—for it is always a difficult matter—by the laying of light rails within such works. Let the emplacement of them be chosen in positions naturally concealed upon the edge of wooded heights and whatnot, and *then* the defence loses nearly all the disadvantages it had through the known position of restricted fortified areas. You have established a quasi-mobile ring of defensive fire and replaced the old immovable ring. The fire of those who desire to invest a fortress so organised has to search as best it may for the unknown gun-positions of those whom it would besiege, and having found them is never certain that precisely the same position will be held upon the morrow. The only condition necessary to the success of such a plan is the condition of numbers. You must have more guns and a larger number of trained gunners, and they have, of course, to do a great deal more work than under the system of narrowly restricted permanent fortifications.

I believe it will be found when the history of the war is written that Przemyśl has been holding

out under these conditions, and that our Russian Allies have been kept at a distance from the old permanent works precisely as the Germans in the regions north and east of Verdun are kept at a distance from the old permanent works of that fortress.

THE EASTERN FIELD.

IN the eastern field of war there are three remaining points of interest, the action in the Caucasus having come to an end apparently with the escape of the remnants of the 10th Turkish Army Corps and the safe retirement of the 11th. The Battle of Sarikamish now three weeks past has had its decisive effect, and has killed the Turkish offensive against Caucasia, while the long-reported concentration of troops for an advance against Egypt has not yet begun to take effect.

The three points of interest then are:—

First: The reported move against Serbia; second, the actions on the frontier of Bukovina, near and upon the crest of the central Carpathians, where the old Northern Roumanian frontier marched with that of Austria-Hungary; and, third, the hitherto curiously rapid advance in Northern Poland between the Vistula and the frontiers of East Prussia.

I name the three movements in the order of their apparent importance.

As to the first: We have as yet no grounds for



PLAN TO ILLUSTRATE THE REPORTED MOVE AGAINST SERBIA.

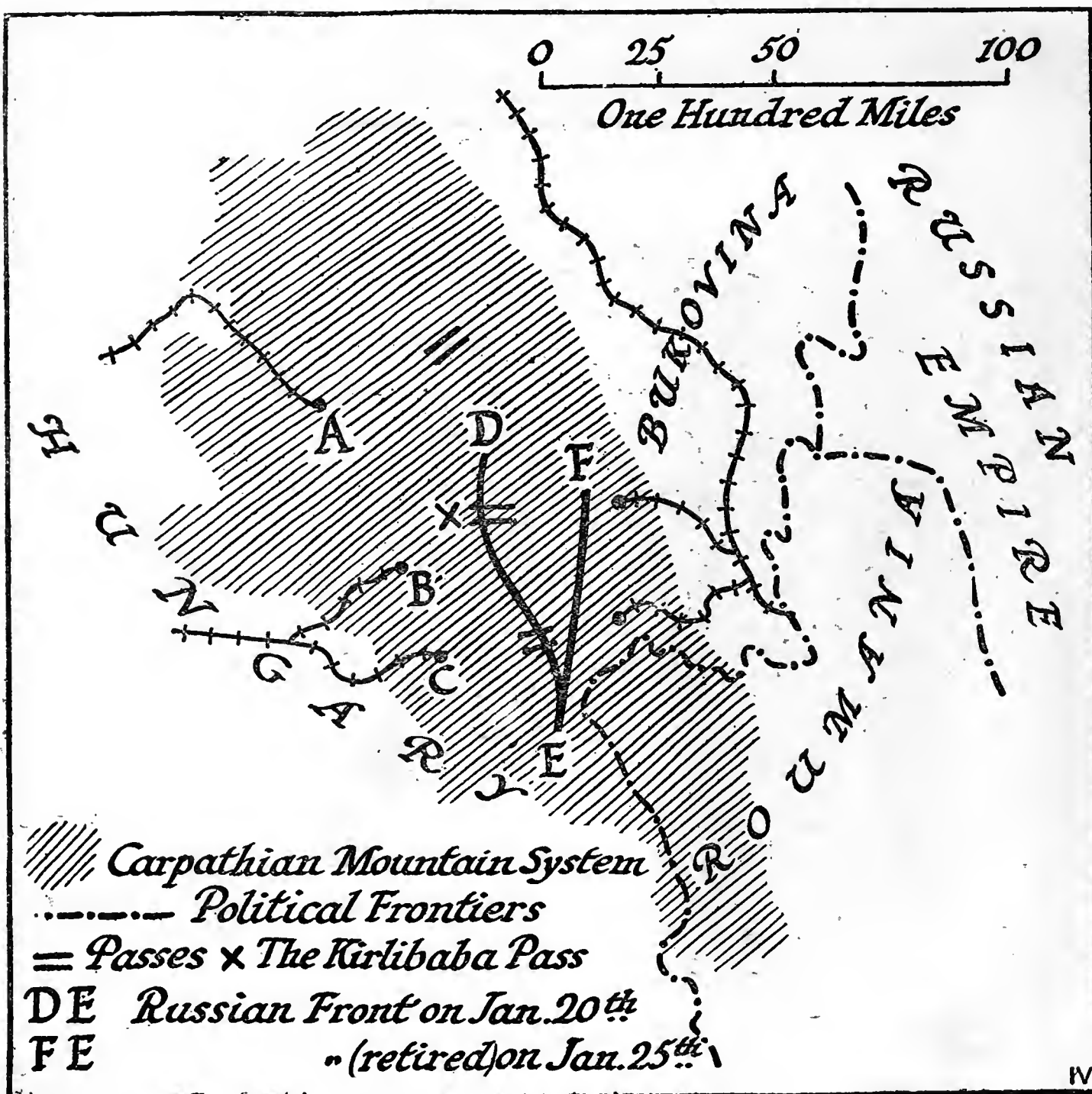
believing that it will be pursued. The news of a considerable advance against Serbia was put forward through the same sources as that which the German Government has used time and again with the object of deceiving the Allies. We had it from the same sources as the news that masses of German troops were being concentrated for a new attack upon the Yser more than a month ago when, as a fact, the whole German effort was being developed in the eastern field, and at the very moment when the German General Staff had determined to stand for some time upon the defensive in the West.

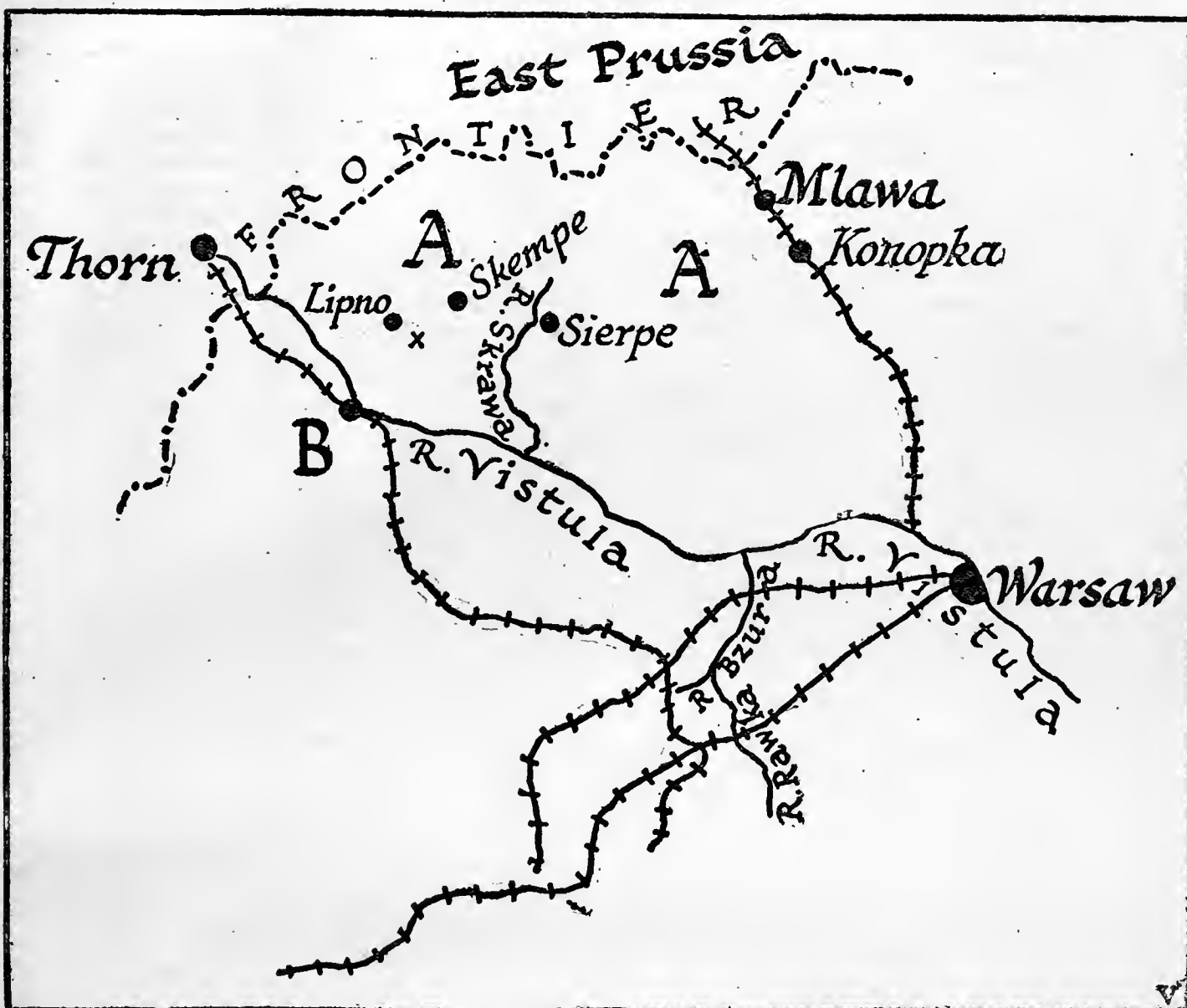
Moreover, it is elementary that a diversion towards Serbia at this stage would be very bad general strategy. The Austro-German line in the eastern field cannot be held as the German line in the West can be held, that is, continuously from end to end. It cannot be so held because it is nearly twice as long. The coming of better weather, the equipment of further Russian reserves, may put the extremities of the line in peril at any moment. For it is obvious that a line of trenches can be turned like any other line by superior numbers when they are available, *unless* that

line reposes, as does the line in the West, upon two absolute obstacles—the sea and a neutral frontier—and unless there be men enough to hold the whole of such a line. The Austro-German forces in the East are not numerous enough to hold a line from the Carpathians to the Baltic continuously, and therefore they are in peril of a Russian offensive whenever Russia has sufficiently advanced her equipment and munitions to attempt it, or even when the first more favourable conditions in the weather permit it. To waste ten Army Corps in a distant and quite separate field under such circumstances and that against an enemy whom it is comparatively easy to contain along the line of his frontier rivers, of the Save, the Drave and the Danube, would obviously be bad strategies.

But there is one possible motive for such a blunder which, like every other disturbance of Austro-German strategy, is political in character, and that motive would be twofold:—

(1) If Serbia could really be successfully occupied a road would be opened for the provision of munition, and if necessary later of reinforcement to the Turkish Ally of the Germanic Powers.





THE CAMPAIGN OF THE VISTULA AND EAST PRUSSIA.

(2) Much more important, it might be hoped that Bulgaria would throw in her lot then with the Germanic Powers.

The reason of Bulgaria's tendency in this direction is already history and is fairly widely known. But because it is not always fully appreciated in the complexity of the present struggle it may be worth repeating here.

When Austria forbade, after the Balkan War, the access of Servia to the Adriatic, she embroiled Servia with Bulgaria by suggesting and permitting the occupation by the former country of land which was (in the main) racially and by culture and tradition, Bulgarian. This area is roughly marked upon the accompanying sketch-map by the letter 'A'. Bulgaria was offered, indeed, compensation towards the East in the district B, but that district was not historically Bulgar at all; it was Greek and Turk, and the artificial arrangement, so characteristic of Viennese international policy, may be compared to a settlement that should give France a slice of Spanish soil, while condemning her to lose a further portion of Lorraine. This unnatural plan was the cause of the second Balkan War in which Bulgaria lost. To recover for herself the district, A, is a permanent object of Bulgarian policy, and if Servia were subdued in a third Austrian attempt upon her Bulgaria would, of course, be offered this district, A, as the prize of her joining with her excellent Army, unstricken as yet by the present war, the Germanic cause.

Apart from that political reason there is no military reason why a great body should be wasted

by itself in the south when it may be needed at any moment to guard the issues of the Carpathians, or to fight against a new Russian offensive in Poland, and until one can get better evidence of such a movement it is as well to hold one's judgment in suspense as to whether it is taking place at all.

(2) The movement upon the frontiers of Bukovina is in another category. We know that the Russians have made an effort here in spite of the abominable weather conditions, and we know of what importance it is to Austria that Hungary should be saved from a second invasion. The news, therefore, of an Austro-Hungarian concentration upon this corner against the Russian movement is probable in itself, and is borne out by the fighting of which we have official news.

There are two points about that fighting which are specially worth noting.

The first is that comparatively small forces are being employed here upon either side. Let it be noted that the front is a short one, not more than fifteen to twenty miles, and that the last accounts speak of "a whole Austrian division" as being engaged in the region of Kirlibaba. But when one talks of a whole division in this way it means that the fighting has hitherto been in terms of brigades, and that compared with the forces hitherto present in the region, even one division is a considerable new unit. Now, consider that upon the Polish front, that is, along the Donajec, up the Nida, and so across to the Lower Vistula, there cannot be less than 100 divisions at work upon the enemy's side, probably a good deal more, and then

one can estimate the comparative unimportance in mere numbers of what is going on on the Roumanian frontier.

The second point to note is that the fighting, such as it is, has not given the Russians permanent possession yet of the crest, that is, of the passes over into Hungary.

The main lines of the geography of this region may be appreciated in the sketch on page 4, where it will be seen that the front spoken of in the communiqués lies upon what is for the Russians the wrong side of the range. The last accounts speak of places ten miles east upon the average of those points upon and just beyond the crest which were mentioned ten days ago, and this almost certainly means that the first points upon the summits seized by the Russians were held by no more than outposts, which fell back before a new Austro-Hungarian concentration from the three railheads at A, B, and C.

These two matters, the supposed new move against Serbia, the Bukovina movements, are not very important points, but they are all there is to note for the moment in this south-eastern field.

The third district in which there has been some movement is, as we have seen, that between the Lower Vistula and the East Prussian frontier. The accounts have been meagre from both sides, and western judgment has been a good deal puzzled by the rapid mention one after another of a series of places which seem to mark a curiously rapid advance of the Russian forces upon the flank of the main German line of communications between Thorn and other German depots, and the German Army on the Bzura and the Rawka threatening Warsaw. The matter is strategically of the utmost simplicity.

For provisioning in a ruined land the German front along the Bzura and the Rawka, where the bid is being made for Warsaw, there are only two divergent lines of railway, the one leading to Thorn, and the other, widely divergent, leading to Silesia and ultimately to Posen. Further, so long as it is really open, the Vistula is an avenue of supply in itself. Now, it is clear that anyone operating in the region, A-A, with a large force is in a position to threaten the Vistula line, and if he

can cross the river to threaten the railway; while at one point, B (which is Vloclawek), the line could actually be destroyed by heavy artillery operating from the further bank of the stream. But there are certainly as yet no large forces in this northern wedge of Russian Poland, and we may be confident that the movements of which we hear are, as has been said before in these comments, no more than the movements of cavalry. For this conclusion we have evidence which has already been given, but which it may be well to recapitulate.

We have in the first place the rapidity of the movements, in the second place the equally rapid fluctuations of the front (if it can be called a front), and in the third place the obvious indifference of the great German forces in front of Warsaw to what is going on upon their flank. To such arguments may be added the fact that, since there is no railway to support a Russian move of this kind (the whole district has only one north and south line through Mlawa to Warsaw), large infantry movements would have to be accomplished even more slowly than elsewhere.

Glance, for instance, at the names of the places where contact has been established. We hear of such contact at Konopka south of Mlawa; again at Sierpe, and across the Skrawa; then for one brief moment we hear (a week ago) of contact at Skempe. That is, we have isolated skirmishes over a field forty or fifty miles broad, and in places separated by distances which bodies of infantry could never deal with in the time.

The most advanced post of which there is mention scores a local German success at Lipno; later the telegrams speak of another brush at least a day's march further *East* again, and all of this means without doubt that only comparatively small bodies of cavalry are "feeling" for each other along that dreary land of stunted trees, small swells of heaths, and bottoms of marsh and mere, not that any considerable movement is or can be yet afoot there. When such a movement really does develop, or if it can develop in spite of the German forces upon its flank in East Prussia, we should at once be aware of it by the retirement from the line of the Bzura, which would be imposed in that case upon the German forces.

COPPER AND COTTON.

THE discussion of a military problem differs from the discussion of a political problem in the same way that the discussion of means differs from the discussion of an end.

Every war is fought with a political object, but the conduct of a war once it is engaged is not a political, but a military affair. In other words, one may say "This action tends to make you win the war, that action tends to make you lose it," and the *political* comment to be offered *against* such purely military grounds of action must have a very great weight indeed if it is to expect attention. For to lose a great war is, next to losing its soul and liberty, the worst thing that can happen to a nation. This is particularly the case in a war such as is this war, deliberately forced by a power whose avowed object, proclaimed through years of public action and speech and print, is mastery over its neighbours, and the enforced change of their lives to its own model.

If you are about to fight another man for your life—and for his; if at the outset of such a struggle you see a third party handing him a lethal weapon; if, seeing this, you neither protest nor attempt to prevent it, then it means either that you are willing to sacrifice your life rather than break some principle which forbids you to interfere, or it means that you believe interference would involve even greater dangers than the possession by your enemy of the lethal weapon in question.

These elementary principles are surely quite clear.

Now, proceeding from them, the first thing we have to establish in a purely military criticism upon a policy of contraband is that the blockade of an enemy should be as complete as possible: but that general point has already been dealt with in these columns. It is too early to return to it, and, moreover, the perfect blockade of the Germanies is not possible in the sense in which it is possible to block the entry of goods into a fully besieged town.

because, at the very least, they can obtain some supplies from neutrals.

But there is another point which will be universally conceded, and which has not been dealt with in these columns. It is of the first importance. It is of capital importance at this particular moment.

If for political reasons distinctions must be made between absolute contraband, conditional contraband and free goods, it is at least clear that the scale so established must run from more dangerous to less dangerous goods. We may doubtfully allow luxuries to pass into a besieged place; we may still more doubtfully allow certain necessities—medicaments, for instance, or (less surely) clothing—to pass into a besieged place; we may do so from a respect for a particular code of morals or from fear of a neutral who is supplying the enemy with these. But before we allow guns and ammunition, and, in general, lethal weapons to pass into the hands of the enemy, we must surely have infinitely stronger grounds for our action.

Now, the point to which all this leads up is that *cotton* is to-day in the latter case.

Cotton is not only a harmless substance which provides the civilian portion of our enemy with a livelihood, with wealth, and with clothing. Nor is it even only a necessary requisite for the equipment of his troops whose function it is to kill or disable as many Englishmen as they can. It is also—and the matter is so clear that one marvels it should ever have stood in doubt—the equivalent of what was known to generations of soldiers as the chief factor in ammunition—*gunpowder*.

When you allow cotton to go into Germany you are behaving exactly as though the Germans had allowed train-load after train-load of good old-fashioned black gunpowder to come week by week through their lines into Paris during the great siege of 1870. You are supplying the enemy with a lethal weapon just as much as though you were to send an order to some neutral country begging them to cast heavy artillery for the benefit of the Germans and undertaking to let those guns enter Germany without molestation. And you are in particular permitting Germany to obtain that one element in her power of killing your soldiers which she cannot supply of herself.

These are, of course, strong words, but they are as clear a part of the truth in the present situation as is the weather or the numbers we discover for recruitment.

It is not to be presumed from this statement that no political argument can be found strong enough for the raising of the blockade ⁽¹⁾ in the one matter of cotton.

In time of war there is no public duty more imperative than acceptance of existing authority, of whatever character; and the political authorities of a great country to-day have before them, as no private citizen can have before him, all the evidence upon which they determine their policy. But what, perhaps, is not always before them or before the public is the purely military aspect of that policy, and it is only to emphasise the military aspect that this note is written.

There might have been the very best and strongest reasons to convince Bismarck in 1870 that the free passage into Paris of train-loads of gunpowder was worth permitting. He would, perhaps, have had a difficulty in persuading Moltke, but still good reasons might conceivably have been present. It none the less would have remained within the due province of criticism to point out that what was going in was not black sand, but an explosive which, when you put a match to it, discharged a missile, and that such missiles killed and wounded German soldiers.

Why does one say that cotton is the equivalent to-day of what was then gunpowder?

Because every explosive charge which launches a missile in modern war is simply cotton treated in a particular fashion—"nitrated" to use the barbarous jargon. The proportion in which it is "nitrated" gives it its explosive character or lack of chemical equilibrium. For instance, the famous T.N.T. (not a cotton explosive), about which such furious nonsense has been written, is a stable form: a triple nitration. The French formula is less stable, that is, more explosive; it is, I believe quintuple; because the French nitrate more highly than the Germans. But in every case, wherever a modern weapon is discharged cotton is the stuff that launches the missile. All the factories have their plant for the treatment by nitration of cotton, and it is in terms of cotton that every operative in the process and every engineer connected with it has thought for years.

The chemicals whereby cotton is subjected to the process of nitration which turns it from a harmless vegetable product to an explosive are obtainable by Germany and Austria in spite of the blockade. They are obtainable in any quantities, for they are obtainable in the last resort from the air. The air we breathe contains, as is now very generally known, nitrogen. But *cotton* cannot be produced in Europe at all. It is a sub-tropical product and the three great sources of it are the Southern States of the American Union, India and Egypt. The supply from India and Egypt we can ourselves control. The whole question, of course, turns upon how to deal with the supplies from America. Whether to purchase them ourselves or no: whether to let them go through to Germany freely.

It will here be objected by those who are familiar with the elements of modern armament that other substances than cotton can be used for the purposes of making the explosive in question. Wood pulp, for instance, can be used, and has been used. Almost any substance capable of absorbing a fluid, of fixing elements in it, and of subsequent dissection and moulding into any shape large or small, might take the place in theory of cotton.

This is true. The objection is sound, and Germany and Austria have inexhaustible reserves of wood, for instance, which might replace cotton if cotton were denied them. Or they might fall back on rags.

But the check that would be produced by a stoppage of cotton supplies may be compared to the check that would be produced by a sudden change of calibre in armament. It would mean the erection of new plant for the manufacture of this all-important military material, the charge used in your guns and rifles, and it would mean what is perhaps more important under the strain of war, *new habits in the workman and his*

¹ I am reminded by a correspondent that, strictly speaking, in the English language and in legal terminology the term "blockade" applies only to the prevention of goods from entering a port. But I know of no other convenient term to describe what is called abroad a "blokus" and I therefore continue to use it.

chiefs. It would mean a host of new experiments. It would mean even after the delay of changing from one material to the other, uncertainty, checks in provision, the calling in from time to time of badly manufactured or dangerous stuff. It would mean either under-nitration for fear of mistakes in the novel materials, or accidents and explosions in the magazines. It would be a very serious check to the enemy for a prolonged space in the war; it would be a permanent drag upon him throughout the war.

When we say that habit is in the workman even more difficult to change than plant in the machinery, the practical man acquainted with manufacture must be consulted, and will surely support such a contention. Under the strain of war especially, when every unit of energy that can be spared is being forced into the business of armament, of continued and feverish supply, to ask great bodies of men suddenly to change tricks of manipulation and acquired routine connected with a particular material and to adapt themselves to another untried material is like asking a general to change his front in the stress of battle. It is imposing upon this side of the enemy's strength the greatest weight we can impose upon it.

To see the importance of the matter in its full light we may contrast cotton with copper.

Copper is indeed a military necessity just as much as cotton is. Copper also could conceivably be replaced, but only by a worse material, and at an expense of change in habit of manufacture. Copper is not a product of the enemy's country save in comparatively small amounts. He must obtain it from without, and the blockade treats copper as contraband. Further, the main supply comes, just as the cotton comes, from the greatest of the neutral countries. Copper is necessary to the manufacture of a rifle cartridge because its alloys and compounds can be drawn in the closed shape without a rim or joint, which makes the metal case of the cartridge gas-tight. These same compounds being much softer metal than any iron do not upon the explosion of the charge similarly damage the chamber into which the cartridge fits. Copper is necessary for making rings round every kind of shell, which rings take the rifling as the discharged projectile leaves the chamber and passes into the muzzle of the gun. But the amount of copper needed in proportion to the stocks available to Germany is something quite different from, and far less than, the similar proportion of cotton for explosives. It is true that something like £4 will be paid in gold by the German Government for as much copper as you could buy in the outer market for £1. But that is because Germany and her ally are wisely making provision for a prolonged struggle, and are determined not to be balked for lack of mere material. High as is the price of copper in Germany and Austria to-day the civilian electrical works are not yet shut down, and the great reserves of copper in the foreign areas controlled by the German and Austrian armies have not seriously been damaged yet.

The civilised world handles every year, if I am not mistaken, something like a million tons of copper. Of this Germany handles every year about one-quarter, or 250,000 tons. Take such a stock of rifle cartridges as two thousand million, or say 500 rounds a man for the Germany Army in its original strength, the amount of copper required for that vast stock I make out to be

10,000 tons, or one-twenty-fifth only of the normal supply for the total industry of the nation. What may be needed for the rings of shells, large and small, would be a much more difficult calculation, for you have all sorts of sizes to take into account, and the rate of expenditure can only be very roughly and inaccurately guessed at. But multiply it by four times the amount required by the infantry, and you are still at no more than a fifth of the normal amount handled by the nation in the year. Add to this the fact that the war was brought about at the moment chosen by Germany, that is, after Germany had been laying in stocks of every kind, and had prepared the fullest possible equipment, and add to this consideration again the known fact that the main masses of copper in the occupied countries—the electric light cables, the electric tramway cables, etc.—have not yet been touched, and you can but conclude that while it is an obvious military policy to prevent the entry of copper as far as possible into Germany and Austria, yet such a blockade can as yet, and for a very long time to come, do no more than unquiet the enemy for the future.

With cotton it is otherwise. It is not a material of which very large stocks are accumulated, or one which remains in stock very long, for it is bulky, and it is of its nature rapidly manufactured. Further, it cannot, like copper, be reduced to its original state once manufactured. Again, it is far easier to control the imports of cotton than of copper. It is impossible to conceal it. It moves in vastly larger amounts, and there is not, as there is in the case of the metal, a corresponding use for it in most of the neutral countries. Finally, the addition to our old stocks of cotton by purchase would be an operation, if immediately expensive, yet not ultimately depleting the resources of the nation.

There must be repeated once more at the close of this note what was said in the middle of it: Political considerations may be strong enough to account for any modification of what would appear upon the surface to be a military necessity. It is none the less important for everyone concerned in this grave issue, the public, as well as their governors, to appreciate that the entry of cotton in Germany and Austria does not mean the entry only of a material which clothes the enemy's soldiers and increases the enemy's general wealth; it means in the eyes of those who supply the armies everything that used to be meant years ago by the word gunpowder. It means the one most obvious and purely military necessity which the enemy necessarily lacks.

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THE WAR BY WATER.

By FRED T. JANE.

NOTE.—This Article has been submitted to the Press Bureau, which does not object to the publication as censored, and takes no responsibility for the correctness of the statements.

THE NORTH SEA.

The Battle of the North Sea.

ON Sunday, 24th, Admiral Beatty's battle-cruiser squadron met the German battle-cruiser squadron in the North Sea, and, having chased it, succeeded in sinking the *Blücher* and damaging two battle-cruisers.

This is probably the most important naval action which the war has yet seen. I use the word "probably" because we do not know what was the German objective. If it were merely to indulge in another East Coast raid, then the action has less military significance than the battle of the Falkland Islands. If, however, the German objective was to endeavour to slip out on to our trade routes—as I recently suggested in these Notes they will sooner or later attempt to do—then the battle takes on a very high importance, for these battle-cruisers would have been far more dangerous in the Atlantic than von Spee's ships would have been had Admiral Sturdee failed to find them off the Falklands.

The idea of a foiled coast raid will probably be most pleasing to popular sentiment in this country on account of the element of poetic justice involved, but for every pound's worth of material damage that the German ships could have achieved against the coast towns, they could have done something like ten thousand pounds' worth on the high seas, to say nothing of a possible interruption of our food supply.

As the Germans turned tail and ran for it so soon as they sighted Beatty's ships, it is clear that they were not out spoiling for a fight at all hazards. On the other hand, to turn and run for it was the only logical thing to do.

To have fought a pitched battle would have resulted in annihilation with small prospect of inflicting much, if any, damage in return, for the British squadron had a very considerable superiority, as the following table of guns available on the broadside will indicate:—

BRITISH.		GERMAN.	
Lion	8 13.5in.	Derfflinger	8 12in.
Tiger	8 13.5in.	Seydlitz	10 11in.
Princess Royal ...	8 13.5in.	Moltke	10 11in.
New Zealand	8 12in.	Blücher	8 8in.
Indomitable	8 12in.		

That is to say, 40 big guns against 23, plus 8 intermediates unlikely to do much damage. I have omitted all reference to lesser guns, as it is obvious that, though well supplied with these, the Germans would not be given an opportunity of using them. Still, the measure of our big gun superiority is not merely a matter of numbers, but also of superior size and, consequently, greater effective range and penetrative power. Altogether, therefore, our superiority may be put as at least two to one, and the German admiral could have had no delusions whatever as to the result of a general action had he attempted one.

As things were, he got off with the loss of his weakest ship, the *Blücher*, and considerable damage inflicted on two of his battle-cruisers—probably the *Derfflinger* and *Moltke*, presuming the flagship, *Seydlitz*, to be leading the line.

No doubt he had hopes of getting back before our ships could close sufficiently to do him much serious damage. No doubt, also, he had dreams of drawing his pursuers over mine fields or in the way of submarines. Of all this, however, we shall probably see nothing in the German reports, which we may be certain will make much of "the British in overwhelming force," and a "masterly retreat." We need not grudge them such an explanation.

There is one circumstance in connection with the action which puzzles me, and that is the absence of the German battle-cruiser, *Von der Tann*, which is, or was, the flagship of Rear-Admiral Funke, a fast vessel armed with eight 11-inch guns, and certainly a more fitting unit to the squadron than was the much weaker *Blücher*.

As to why she was absent there are three possible hypotheses. Of these, the first, that she was undergoing refit, is improbable. A second is that she has either been sunk or badly damaged by mine or submarine, and the loss concealed.

A third possibility is that she came out and managed to slip away bound for the trade routes. Whether she will get there is another matter. If she does, the Germans will probably consider the *Blücher* well lost; and till the whereabouts of the *Von der Tann* is ascertained, we may do well to avoid over-elation about a victory, of which the main significance is in any case that our ships were at the right spot at the right moment, rather than the precise amount of damage inflicted.

Submarine Attacks on Merchant Shipping.

On January 21 the British steamer *Durward* was captured and sunk by a German submarine off the Dutch Coast. According to the accounts which have been issued, three torpedoes were fired into her, and it then took her about half an hour to sink. The submarine is stated to be *U19*, and the approximate cost of the torpedoes fired must have been something like double the value of the cargo of the *Durward*. A cruiser could have done the same work at about one-tenth to one-twentieth of the sum involved. The Germans may, of course, obtain more value for money next time, but taking one thing with another it looks as though the von Tirpitz plan of attacking merchant ships by submarines has economic disabilities likely to render it inoperative, the more so as only a relatively small number of German submarines are armed with guns, and so are unable to compel a steamer to stop.

A submarine which can get out is, of course, an efficient substitute for a cruiser which cannot; but since war is mostly a matter of psychology and money, paying twopence for a penny is not likely to endure very long.

Of course, a certain amount of capital is injured, out of the sailing of various vessels being cancelled. But I for one absolutely refuse to believe that much money is to be made out of commerce warfare unless it be on a heavy scale. And if nothing can be made out of it, the odds are that the enemy is accumulating financial losses and wasting strength accordingly. To adopt a chess analogy, at the best there is little in it except exchanging pieces. Unless a great deal of discrimination be used by the enemy, it is a great deal more likely to be equivalent to throwing pieces away. There is not the remotest occasion for panic in any way whatever.

Nor, so far as the *Durward* is concerned, is there any reason to describe the operation as "piracy." So far as the circumstances admitted, *U19* acted exactly as the *Emden* acted. Her ultimate fate, we may hope, and believe, will be more or less the same. Everything was what is vulgarly known as a "fair cop," and to seek to represent things otherwise is foolishness.

This statement will, I expect, bring me a certain storm of protest from those who fail to realise that we are engaged in a war of facts without regard to sentiment. If the Germans submarine a single merchant ship, leaving her crew to drown, we shall then have a very decided case for vengeance. But our case then will certainly not be improved by hysterics now about perfectly legitimate and reasonable acts of war.

So long as a merchant ship is captured and destroyed only after her crew have been saved, there is nothing to be said, whether it be from the air or from under the sea. There is no difference in principle involved. If the enemy considers himself likely to obtain advantage by such procedure he is morally as well as legally entitled to seek that advantage. It is by no means to our disadvantage that he should divert his torpedoes from main to subsidiary objects.

The Admiralty and the War.

For some time I have been receiving letters which express profound dissatisfaction with the Admiralty and our Admirals. Of late these letters have increased in number and intensity, and it is abundantly clear that an ever-increasing section of the public is coming to regard Winston Churchill as a "gasbag," Lord Fisher as a "noodle," and Admiral Jellicoe as an "incompetent."

The only satisfactory feature of this state of affairs is that it is characteristically British—it happened regularly in the old wars. With the possible exception of the Trafalgar campaign, there was never a war in which the great British public was not finally convinced of the incompetence of all

those primarily responsible for its naval operations. I am by no means sure that I should attempt to except the Trafalgar campaign—no less a person than the great Duke of Wellington regarded Nelson as a “vapouring and vain-glorious charlatan”!

This, or some similar term, is frequently applied to Mr. Churchill. From one point of view it is correct: he has said things about the enemy which smack much of the democratic political platform. But, we have to remember that this is a democratic war, and that the millions like their stuff well spiced, and need it if they are to be kept up to the mark. For the rest, Mr. Churchill is the first First Lord we have ever had who has laid himself out to become familiar with the technicalities of his post. He entered office deeply distrusted, and cordially disliked by the Navy. The outbreak of war may not have seen him loved afloat, but it certainly found him respected and esteemed in a way that no predecessor ever was.

We now come to Lord Fisher, a man with an absolute gift for making personal enemies, and a remarkable talent for making himself unpleasant to any enemy. That, apart from his record, is proof that he is no “needle.” As for his record, that began in the Mediterranean years ago, when he was thoroughly abused for sacrificing old ideas about “steam tactics” in favour of some new-fangled fad of his own about the value of the torpedo. These ideas are accepted to-day, but when promulgated they were regarded as modernity carried to ridiculous excess. It is possible that Lord Fisher may occasionally have anticipated to-morrow a little too quickly; but there is certainly no “back number” about him. The only error he is ever likely to make is in crediting the enemy with better brain than he actually possesses. But I really do not think that we are likely to arrive at any ultimate trouble over a Sea Lord who is inclined (by his record) to over-estimate the enemy's brain. Rather, I think, we should esteem him as a man prepared for every contingency.

We now come to Admiral Jellicoe. His record in naval manœuvres is that he never was beaten. War may be different, but every naval manœuvre scheme simulated real war as nearly as was possible. He was easily the best man at the game, and the games that he played were many and various.

Now, without any eye-wash, compliments or anything of that sort, I may say that all the critics, non-technical or worse as they may be, are all actuated by genuine motives, but this war is emphatically a case of “trust the man at the helm.”

(The above was written before news was received of the action in the North Sea. In order to avoid seeming to pose as a prophet wise after the event, I have therefore cut out certain paragraphs which followed these remarks, and will merely refer readers back to a previous issue of these notes.)

A word may be added as to the German official statement that one British battle-cruiser was sunk. The statement is incorrect on the face of it; but we shall do well to avoid regarding it as an official lie. At the Yalu the Chinese honestly believed that they had seen a Japanese cruiser sink; at Tsushima the Russians were equally convinced that they saw a Japanese vessel go under. Similarly, and for similar reasons, I am of opinion that the German claim is made in all good faith; and if we call them liars we shall merely convince them that their claim is true, inspire them accordingly, and discount the moral effect on them of our victory accordingly also.

The correct explanation of the German claim is probably as follows. The *Blücher* was seen to drop astern in a sinking condition. A little later, the British ships were up round and about her, and other German observers saw her sink. The wish being father to the thought, it was perfectly natural honestly to presume that the unrecognisable mass of sinking wreckage was one of the British warships. It has been absolutely demonstrated that precisely similar reasons accounted for the mistaken claim at Yalu and Tsushima. There is an old saying about the danger of assuming your opponent to be a fool. It can be equally dangerous to assume him a liar.

Air Raid on the East Coast.

The air raid on Yarmouth and district has probably a considerable significance. We may take it that it was merely a reconnaissance somewhat on the lines of the first naval raid on Yarmouth, when the *Halcyon* was fired at. We must be prepared for the next effort to be quite on Scarborough lines, and perhaps more so.

Emphasis is laid by the Germans on the fact that their “naval airships” were concerned in the raid. This may be merely a reply to the fact that it is the British naval air service which has played havoc with German Zeppelin sheds on more than one occasion; but personally I am not inclined so to regard it.

There is considerable difference between navigating a dirigible over water and over land, and I am inclined to be

sceptical as to whether any purely military Zeppelin could cross the North Sea.

The German naval airships are said to be differently constructed to the land ones, owing to experience gained.

I have no exact information as to where this difference exists: I merely know of its existence. But the point is an important one to remember. It has something to do with a variation of cooling between the atmosphere of sea and land, and the consequent expansion or contraction in “gas bags.” Further I cannot follow it.

If, however, the difference in construction is so great as has been alleged, it means that only the naval Zeppelins which have been built and the crews specially trained for sea work are seriously available for offensive operations across the North Sea against this country.

As to the operations which have already been indulged in, the less said the better. From the military point of view, they were absolutely fatuous: one cannot possibly conceive of even an expected military advantage (except in so far that it has increased recruiting in this country, which was certainly not the object sought after). From the humanitarian standpoint the affair was mere ordinary murder in cold blood.

Comment has been aroused by the circumstance that neither by sea nor land was any defensive attack made on the hostile airforce. It is rather generally attributed to inefficiency on the part of the Naval Air Service, and all others concerned.

I do not think this criticism justified. I have seen something of our aerial defence work. It is not in the public interest to go into details, but whatever else it may have been, there was certainly no lack of efficiency visible.

Even on land and water, where men have been accustomed to fight for thousands of years, surprises still occur, despite all precautions. In the air, which is an entirely new battlefield, surprises are necessarily far more easy, since all precautions have as yet to be based to a very large extent on theory.

THE BLACK SEA.

That the *Goeben* has been considerably damaged is now independently confirmed, neutral eye-witnesses having seen her carefully screened by transports. The chances of her being effectually repaired by the dockyard at Constantinople are small, as the resources for any such work are inadequate, and the temper of the Balkan States hardly of a nature to lend itself to the smuggling through of spare parts, etc.

One way and another, therefore, there is fair reason to hope that the Russians, who have at present secured the undisputed command of the Black Sea, will continue to hold it undisputed till the end of the war.

At present they are making full use of their advantage, and the Turkish loss of war material, sent overseas in spite of the obvious danger, must be growing very serious. The latest report is that a transport carrying most or all of the Turkish aeroplanes has been destroyed.

GENERAL MATTERS.

ANSWERS TO CORRESPONDENTS.

P. S. (Castlecaulfield).—An idea substantially similar to yours was mooted many years ago. I do not know whether it has been adopted. If the Admiralty is not sympathetically responsive, it may either mean that the idea is in use, or else that there are technical difficulties in the way of its employment.

A. S. H. (Dundee), and P. H. (Southend).—I do not think that I was in any way unduly optimistic in estimating that there has been no numerical net increase in the German submarines. They have certainly lost more boats than they admit to; and they could not possibly yet have completed more boats than were in their normal programme. That since the war began they have laid down a great many boats is probable enough, but none of these would as yet be complete. As regards the value of scouts, whether or no both fleets are intent on engaging does not materially affect the question. It is in any case of the utmost importance for an admiral to be kept informed of the exact strength, formation, and course of the enemy, before that enemy is actually sighted. As regards my statement that, “For the rest, we only know for certain that a dozen Dreadnoughts, plus the complementary lesser craft, are superior to a dozen plus x Dreadnoughts minus the complementary lesser craft,” did not merely refer to scouts only, but also to destroyers, submarines and auxiliary vessels of every sort or kind.

E. D. F.—I am inclined to think that “Hartmann, the anarchist,” was one of the best futurist stories ever written; but you must remember that it was a story, not a question of existing facts, such as we now have to deal with, and I am afraid that your “suggested floating battery” comes into something like the same category. That is to say, it does not

at present exist, and this war will be over long before any such vessel could exist, even supposing the idea to be feasible. We have to fight this war with existing material.

"One Who Knows."—It is obviously impossible to discuss the efficiency of any subordinate admiral. I have read your letter with much interest. I am not personally acquainted with the officer mentioned, but I was a frequent visitor on board his flagship in a previous command, and I am bound to say that views expressed about him in the wardroom in no way coincided with yours. He may have "gone off" since; but I am afraid that I should require more evidence than the statements of an anonymous correspondent before I would suggest any such thing in these columns. It is obvious that you have inside knowledge of the naval service, but—so have I! Other matters apart, don't you think that I'd be what the Americans call "some cad" to attack a naval officer on evidence sent anonymously, even granting that all you allege were quite true?

E. H. (Hatch End), and various others.—I appreciate your sentiments, but I think you are quite wrong. I have dealt with the subject in the body of my article this week, as I think it is certainly one of supreme importance. If my arguments do not satisfy you, I shall be extremely obliged if you will write again to the editor for publication, because I for one am firmly convinced that this question of the Admiralty and the public is a matter of far greater moment than the submarining of a battleship or two. As I have said,

I think critics of the Admiralty are incorrect; but there exists the old story of the danger of sitting on the safety-valve, and I trust that you will understand that, absolutely unsympathetic though I am to your arguments, I do realise that the underlying motives of your criticisms are entirely patriotic, and on that account worthy of appreciation and commendation, on which you will, I hope, forgive me if I suggest the possibility that I know more about the inside and unwritten history of the naval war than you do! From the King to the errand boy, we are all of us engaged in a struggle for national existence. This being so, views naturally vary widely; but no one outside a lunatic asylum would seek to grind an axe. Did I think that the Admiralty was wrong I should assuredly assert it in no uncertain words.

M. H. S. (Reading).—I do not believe in the German "super-submarines," intended to attack British commerce on the high seas. They have also been heard of as intended to transport an invading army to our shores. The reason for my scepticism is, that if they had such craft the Germans would have been careful to observe absolute secrecy about them.

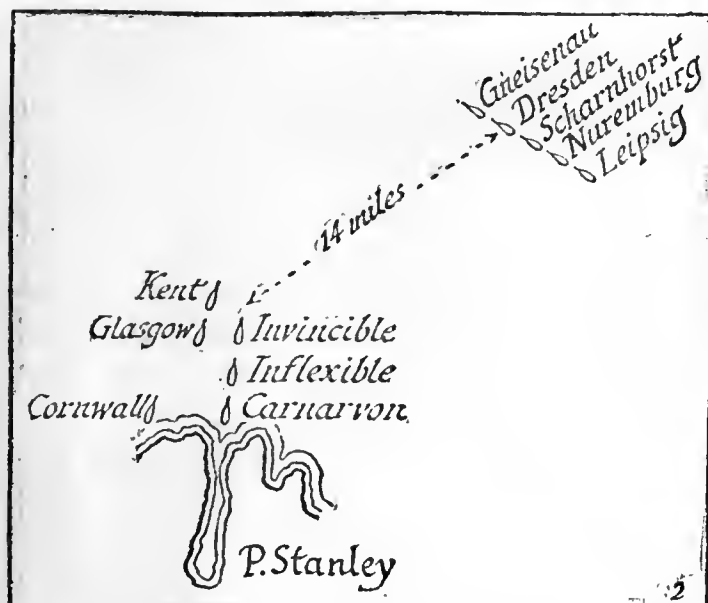
L. M. M. (Edinburgh).—Thank you for your letter, which I am answering privately. The contents are better not published.

A. C. (Hamilton).—You will see that I have already dealt this week with one of the questions raised by you. The rest I will—so far as possible—refer to in my next week's notes.

THE ACTION OFF THE FALKLANDS.

AS DESCRIBED BY AN OFFICER ON THE "INVINCIBLE."

NOTE.—This Article has been submitted to the Press Bureau, which does not object to the publication as censored, and takes no responsibility for the correctness of the statements.



ing of *Scharnhorst*, *Gneisenau*, *Leipzig*, *Nurnberg* and *Dresden* were there. We, of course, could hardly believe our luck, as this was the very squadron that we had come out to destroy, and they had come to find us instead of we them (of course, it was obvious that they did not know that the *Invincible* and *Inflexible* were with the fleet), and their reason for coming was to destroy our coal and wireless station.

At about 10 a.m. we left harbour, having got steam for full speed. Directly the enemy saw us they turned round and went away at full speed—they were then about 14 miles away.

The disposition was then as in Plan 2.

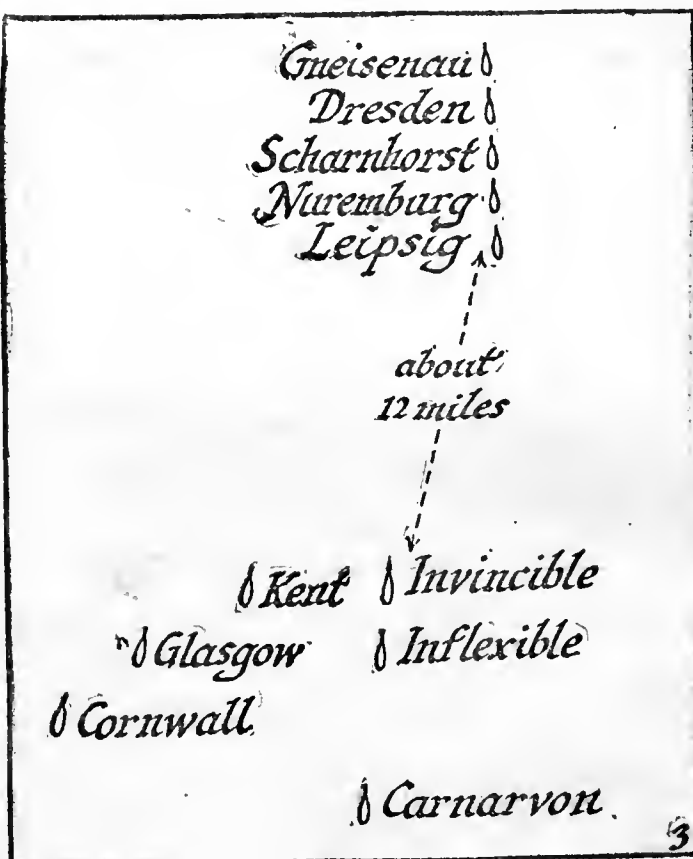
The *Kent*, *Glasgow*, and *Carnarvon* were going under 24 knots, and therefore we had to reduce speed to keep them with us; we were, however, slowly overtaking the enemy. The enemy altered course, and we were nearly right astern chasing them, as in Plan 3.

I EXPECT by now you have heard all the news about the sinking of the *Scharnhorst*, *Gneisenau*, *Leipzig* and *Nurnberg*. Anyhow, as all censorship is removed I will tell you as much as possible of the action and events leading up to it. The situation was more or less as follows:—

On Monday, December 7th, we arrived at Port Stanley in the Falkland Islands and prepared for coaling. The *Canopus* battleship was installed there as guard ship. The ships, therefore, in Port Stanley on December 7th were *Invincible*, *Inflexible*, *Carnarvon*, *Cornwall*, *Kent*, *Glasgow*, and *Bristol* and *Macedonia*.

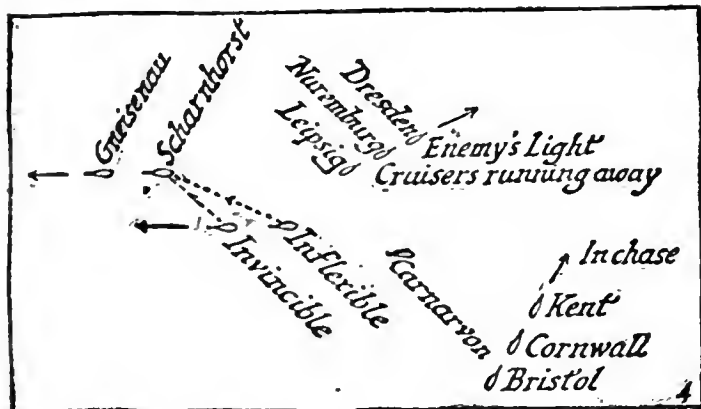
At 7.30 a.m. on December 8th we started coaling, we being anchored in Port Stanley ("we" being us and *Inflexible*). *Kent* and *Cornwall* and *Bristol* had finished, *Glasgow* was doing repairs. At about 8 a.m. signal station reported a four-funnelled warship in sight, and then shortly afterwards a light cruiser. These were recognised as either the *Scharnhorst* or *Gneisenau* and the *Nurnberg*. We immediately gave orders to the fleet to raise steam for full speed. The *Kent*, *Cornwall* and *Glasgow* proceeded out almost at once, and signalled the movements of the enemy to us from the entrance. The *Canopus* opened fire with her 12-inch guns from her moorings.

The enemy were then reported to be retiring, but were later reported to be waiting further off, having been joined by three ships. We then knew that the whole squadron, consist-

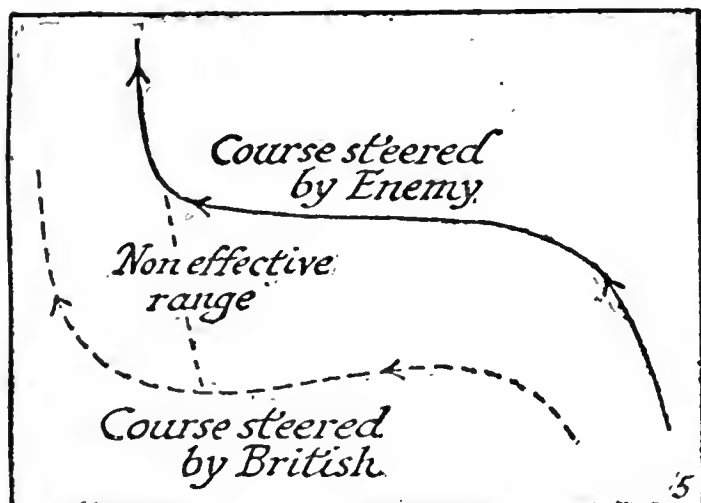


Seeing that the *Carnarvon*, *Kent* and *Glasgow* couldn't keep up we went on 24 knots, and at five minutes to one we opened fire on the sternmost light cruiser. The *Scharnhorst* men, seeing that to run away was hopeless, turned and engaged us, and the three light cruisers (enemies) made away pursued by the *Kent*, *Cornwall* and *Glasgow*.

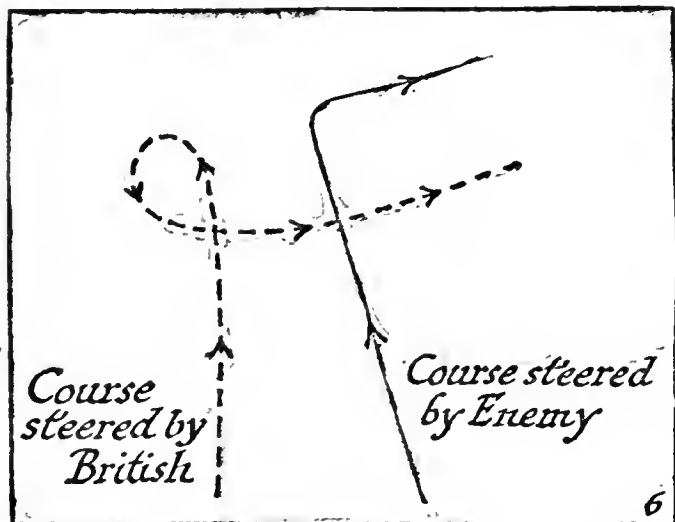
It was then like this:—



When we started opening fire I saw no more as I had to go down into the turret, but this is roughly what happened. The German ships' largest guns were 8.2in., while we had 12in., and it was therefore up to us to keep out of their penetrative range and torpedo range, and sink them with gun fire. We found soon that we were on slightly diverging courses; the Germans seeing this turned to starboard in the hope of getting away, but we also altered starboard and came up with them firing the whole time, viz.:—



We then found the smoke was getting in our way, so we altered, viz.:—



and got the other side of the enemy. Shortly after this the *Scharnhorst* sunk (3.55 p.m., after we had been in action two hours). We were then concentrating on the *Gneisenau*, the *Scharnhorst* having slowly listed to port and then turned bottom up, and the propellers were seen still going round. The *Gneisenau* fought on very gallantly, when at 6.12 p.m. she listed to port and slowly dived down.

Now to go back to what I did—the whole of the time I was superintending the loading in the turret. Several things

broke down, but we soon got them into action again. It was rather awful, and I was in a bit of a funk as I couldn't see what was happening, and you quite distinctly heard the screech of their shells, and one quite early made the whole rock by hitting somewhere near. They let us know when they could about how the action was going. Of course, I never saw the *Scharnhorst* sunk, but after the "cease fire" had gone I looked through the telescope and saw the *Gneisenau* heel over and dive.

Now came the awful part. The *Inflexible*, *Carnarvon*, and ourselves hurried up to where she had disappeared, shown by slightly discoloured water, and on coming up close saw a good amount of wreckage with men clinging to it. Never shall I forget it—they were mostly calling out, and it sounded like a wail to us. We all lowered boats as quickly as possible, and picked up as many as possible, but heaps must have sunk as the water was 40 degs., and they were all numb. It was awful being on the ship, because when all the boats were away they kept floating past, some swimming, some unconscious just beneath the water. We lowered people down on bow lines, and hauled them up the ship's side—some of them were quite dead when they came in. Altogether this ship saved about 115, of which 14 were dead. The *Inflexible* saved about 70, and the *Carnarvon* a few. As regards the enemy's light cruisers, the *Cornwall* and *Glasgow* sunk the *Leipzig*, and the *Kent* the *Nurnberg*. The *Dresden*, we suppose, got away.

As regards our damage, eighteen shells hit us, doing various damage. Of these I will name one or two of the most important:—(1) Entered wardroom, burst, went through deck beneath, absolutely wrecked wardroom, nothing left whole except steel walls, which were riddled with splinters. (2) Entered through upper deck and burst between wardroom pantry and my cabin, wrecked pantry, large splinters entered my cabin, wrecked bunk, set fire to bedclothes, and wrecked drawers under bunk, made splinter holes in walls (the hose was then turned on my cabin, wetting most of my clothes which weren't burnt or riddled). (3) Entered starboard side, went through two decks and entered Admiral's pantry without bursting. It is certainly miraculous that we had no casualties, except the Commander slightly wounded. The *Inflexible*, which was only hit three times, had one killed and three wounded, the *Kent* about seven killed and six wounded, and I don't know about the others.

I daresay you have noticed that I haven't mentioned about the *Bristol*. She luckily couldn't raise steam in time, and so came out later with the *Macedonia*, and was able to capture or sink the enemy's merchantmen and colliers. I told you that we had 101 saved on board. Seven of these are officers, and the funny part is that I know two of them, and have met them several times when I dined on the *Gneisenau* in China (the *Scharnhorst* and *Gneisenau* were in China when I was there). However, the fellow I liked best, who was in the *Gneisenau*, I am afraid was drowned.

The weather during the action was quite calm.

At Devonshire Park, Eastbourne, on February 8, at 3.30, Mr. Hilaire Belloc will give an illustrated lecture entitled "The Progress of the War."

At Devonshire Park, Eastbourne, on February 4, at 3.30, Mr. F. T. Jane will give an illustrated lecture on "What the Navy is Really Doing in this War."

MR. HILAIRE BELLOC will lecture on "Strategy, Numbers and Material," at Queen's Hall on the afternoon of Tuesday, 9th February. His next evening lecture there is on Wednesday, February 17th.

LOOKING BACKWARDS.

Readers of the special articles appearing in this Journal on "The War by Land and Water" will doubtless wish to retain in correct rotation this remarkable series of articles by HILAIRE BELLOC and FRED T. JANE. We have, therefore, prepared special cloth binders to hold the first thirteen numbers, at a cost of 1s. 6d. each.

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MUST THERE BE A WAR OF ATTRITION?

A PLEA FOR A STRONG AERIAL OFFENSIVE.

By L. BLIN DESBLEDS.

NOTE—This Article has been submitted to the Press Bureau, which does not object to the publication as censored and takes no responsibility for the correctness of the statements.

IT might be an interesting theme for the military historian to discuss how the Napoleonic wars would have ended, had not the French, a hundred years ago, been defeated at Waterloo; but there can be no two opinions that Wellington's crushing victory brought to its close a campaign which might have been very protracted had it not been for the opportune intervention of the English contingent in support of their Prussian allies. Yet the result of the Battle of Waterloo—which has shaped the course of the history of the great nations for the last hundred years, and has exercised a greater influence on the political history of the world than any other recorded event—in its last resort depended upon a timely participation of the English guard.

It is a matter of pure speculation to imagine what would be the present relative position of the European powers had the Haye-Sainte been crushed and the English troops, which were under cover in the corn fields, been annihilated before they could take a timely part in the battle which dashed to the ground, for ever, the dreams of conquest of the great Buonapartes.

THE BATTLE OF WATERLOO AND AIRCRAFT.

Let us now consider the battle of Waterloo in the light of modern knowledge, and see how its result might have been affected by the employment of certain appliances which scientific progress has since brought to the service of war. Let us picture to ourselves the anxiety of Napoleon at his enforced ignorance of the position of Wellington's men and we shall then have no doubt that, if he had had air scouts at his disposal, he would not have failed to make good use of them. This is clear from a perusal of his military *Manuel*, especially that part dealing with the importance to a commander-in-chief of having exact information about the strength and position of the enemy. Let us assume that his air-scouts had located the position of the English troops, waiting in concealment for orders to participate in the battle that was already engaged, and let us, merely for the sake of argument, suppose that he could not take from the general field of battle a sufficiently strong force to hurl against the British forces either to destroy them or to keep them in check, thus depriving his enemy of a reserve which might be thrown against him, as, in fact, it was, at the critical moment. What would a Napoleon do in the hypothetical Waterloo we are considering? He would know that if he did not annihilate the English troops or succeed in keeping them away from the field of battle they would be employed against him at a well-timed moment; and yet he had no troops to use for the purpose without courting disaster from another quarter.

Let us exert our imagination a little more. Let us suppose that, at this grave moment, some daring airmen of the Napoleon's Imperial Flying Corps, realising their commander-in-chief's perplexity, hinted to him that their aircraft, besides being valuable for reconnaissance or kindred work, were also of great offensive value, and that the worth of their suggestion was recognised by their commander. The question which would immediately present itself to the Napoleon for solution would be, how best to use his offensive aircraft to attain his special object—that is, either to annihilate the English troops or to prevent them from coming to the assistance of their Prussian allies.

THREE KINDS OF AERIAL OFFENSIVE.

Three methods of dealing with the problem would suggest themselves. He might (1) carry out an aerial raid over the ground occupied by the English; (2) attack, from above, the English troops lying in the cornfields; and (3) by destroying the roads, bridges, etc., prevent the English contingent from participating in the battle.

If the Napoleon possessed but a small number of aircraft, the first solution would be the only one capable of adoption. Its effect, if the operation were constantly repeated, would be either (1) to force the English troops to take up a new position not exactly of their own choosing, or (2) to compel them to take part in the general action sooner than they had anticipated. In either case the aerial raid could not do more than alter the original plans of the English commander in

some details, and would not influence, to any considerable degree, the issue of the battle raging at that moment.

If, however, the Napoleon had at his disposal a powerful force of aircraft, consisting not only of a great number of machines but also of an adequate body of airmen, fitted and trained for offensive work, he would be in a position to adopt the second course open to him; that is, to make a regular attack from the air on the English forces below. There would then be a battle royal taking place in a vertical plane, and of such a novel character to those on the ground that, not only morally—because they would be unprepared for it—but also materially, they would be at a disadvantage to the aerial attackers. The fighters from the air would be provided with the equivalent of a great number of big guns, all placed in position, and ready to deal death and destruction, right and left, whilst the soldiers below, in replying to the attack, would, almost entirely, be relying on their rifles which they would use with astounding inefficiency, for all their training and practice had been based upon a horizontal range. The result would have been that the English reserve would have found themselves in such a difficult position that not even a disordered retreat nor a precipitate flight could save them from the aerial offensive.

For certain reasons, some based on local and economic factors and others on the psychology and training of his airmen, the Napoleon of our hypothetical Waterloo might, however, prefer not to engage the English force in a vertical battle, but, by directing his aerial attackers to destroy all the possible routes by which the English reinforcements could march to the support of their Prussian allies, he would prevent them from influencing the battle in progress. For the success of such a plan, it would be necessary that the aerial attack should result in the destruction of all the avenues whereby the enemy could receive timely reinforcement. Such an attack must be made in force, and the same bridge, or road, or passage should be attacked several times to ensure certain destruction. An aerial raid, of a small number of aircraft, made with the object of destroying avenues along which reinforcements could be sent to the front, would not, however, lead to the moral certitude that the aim of the raid has been accomplished.

Let us now turn from the hypothetical Waterloo which, as regards many details has, of necessity, been very imperfectly and inaccurately examined, and let us see how, in the present conjecture a strong aerial offensive of the Allies might considerably curtail a campaign which, by the employment of the ordinary method of warfare only, promises to be a very protracted one.

MUST THERE BE A WAR OF ATTRITION?

Almost all the foremost military critics of the world have repeatedly declared that the present great European War must be one of attrition. Must it, however, be so? Yes, if the Allies do not apply to their utmost all the legitimate means at their command. No, if they employ, on a comprehensive scale, a method of attack which, as we have seen, might have reversed the results of Waterloo and which, as the writer has pointed out in his last article,* could prove of inestimable value in the present war, and especially in the situation existing to-day at the front.

Without taking into account the misery and poverty and grief of hundreds of millions of women and children, who, by no process of logic, can be made responsible for the war; without considering that every day that passes sees the destruction of thousands of noble and valuable lives; without being influenced by the fact that all the scientific progress of the world, relating to a true and well-understood civilisation, is at a standstill, the writer contends, on purely technical grounds, that it might be profitable to the Allies, without relaxing in any degree the rigid application of the plan of campaign of their commanders, in whom they have full confidence, to enter upon a formidable aerial offensive which might render a war of attrition unnecessary after all. Think

* "The Aeroplane on the Offensive," *Land and Water*, January 23, 1915.

of it! Expressed in terms of money only, every day by which the duration of the war can be shortened means a saving of several tens of million pounds.

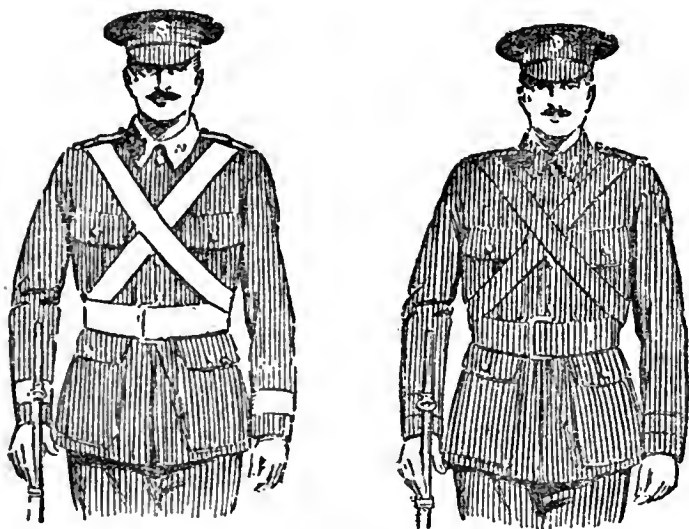
The writer, for obvious reasons, cannot, in an article meant for publication, express himself otherwise than in general terms. So he will, to-day, content himself by asking his readers to consider the effect it would have on the duration

of the war if an aerial attack by the Allies succeeded in cutting, for twenty-four hours only, all means of communication between the Germans in their trenches and their base. And from his information as well as his technical knowledge and calculations, the writer knows that, in seriously suggesting a strong, comprehensive and sustained aerial offensive, he is not a victim of wild dreams.

THE QUESTION OF INVISIBLE UNIFORMS.

By COL. F. N. MAUDE, C.B. (late R.E.).

IN my last article I quoted the opinion of the Duke of Wellington, that in his day the colour of uniforms was of small importance as compared with the desirability of an easily distinguishable silhouette against the sky-line, and it must be apparent to anyone who thinks the matter out that it must be of even less importance nowadays, when men begin to fire on one another at ranges measured by the mile. There were riflemen in the Duke's days in all armies who could shoot as straight up to about 400 yards as we can shoot at 1,200, and the sport of picking off officers, shooting down gun teams, etc., was as popular then as now, and concealment to the stalker must have been quite as important, and far more difficult to obtain, just as it is quite easy to get within a mile of a black buck, but to creep up unobserved within the last two hundred yards is much harder. The truth is, as I said before, that the whole question never received any scientific tactical consideration at all, and that we were rushed into the change from red to khaki by an utterly uninstructed public opinion which will cost us far more lives in the near future than the reformers ever expected to save.



Cut this picture out, place it against different backgrounds at a distance away from the eyes until the figure looks as large as a man appears at 500 yards, i.e., about half an inch high.

I do not question that there are times when concealment is desirable, but I do maintain that in the big battles which lie ahead of us it is far more important for the success of the whole army that the Commander, and his Staff generally, should be able to see how the several units under their command are combining their operations, than that here or there a few skirmishers should retain a whole skin. The trouble is that a little more consideration of the matter would have shown us how to combine both requirements at the same time.

I found the key to this problem some years ago at a cold-weather camp in India, by the following curious experience.

Riding with the Staff for a big Divisional inspection on a great open plain, without a scrap of cover for miles, when approaching the ground we found that we could see one single scarlet battalion drawn up, and, away on its left, the glint and movement of horses betrayed a battery. Apparently two battalions were still missing, and, as the General did not wish to catch the line unprepared, we pulled up and waited. There were the usual caustic comments on the — and — Regiments. "Late again, as usual" kind of thing. But presently a slight movement in the interval caught my eye.

I produced my field glasses—an unusually good pair, with a big field for picking up colours in the dark or in a half-light—and there, to my astonishment, I saw the two missing battalions drawn up in line, quietly waiting in their appointed places. I said nothing for a few moments until the General became impatient, and then I passed up my glasses. I was the only one present whose uniform allowed him to wear field glasses in full dress, and the General's astonishment was complete.

He had had much experience in the Mutiny. As we rode home afterwards we discussed the case and similar happenings, and found an explanation simple and scientific enough. All the infantry were wearing scarlet alike, and all in marching order, but whereas the one battalion we had detected at once wore brown belts, the others had the usual pipeclay belts of the period. The white pipeclay belts broke up the mass of each individual into rectangles and triangles not exceeding 12 inches in size, and at anything over 1,000 yards these little surfaces dwindled to points too small to be perceived as colour by the optic nerves.

Then we compared notes, and I carried out observations for quite a long period under his direction, which led to the final conclusion that except against a particular background it was not the colour but the size of the unbroken mass of it that mattered. Even "Skinner's Horse," who then wore a most conspicuous canary-coloured tunic or kaftan, became invisible at 1,500 yards when wearing their white belts, whereas they, or any other regiment, in complete khaki, belts and all, could be picked up at a couple of thousand yards or more with ease. But the essence of the whole matter lay in immobility. Moving troops can always be detected, and the trouble is that it is precisely when troops are lying down—i.e., not moving—that both Staff and artillery want to know exactly where they are, and that is just the time when, with the present khaki, you cannot find them.

The moral effect on the men themselves must also not be neglected. In the present war, the cause for which we are fighting is so great that no hardships or discomfort seem able to depress the men, but it will not always be so, and I can recall many instances told me by men in India, and in the Zulu War, of the electric effect produced on a "fed up" body of men by the order for a general clean-up and an inspection parade. When the men saw themselves again as a whole, clean and smart in spite of retreats and hardship, the regiment found its own soul, so to speak, and became a different body.

Let me cite a single instance told to me by the Subhedar Major of a native cavalry regiment who had been through the dreary experience of the siege of Kandahar in 1879; where depression had reigned supreme and the native regiments were more than a little doubtful in their minds as to the invincibility we had claimed.

Roberts' column had arrived overnight, after the march from Kabul, and next morning, the 1st September, my friend's regiment marched out to take up its position for the coming battle. On the way they were overtaken, first by the 9th Lancers, then by a battery of R.H.A., both of them turned out to perfection as if for a Royal inspection, and he said, "Sahib, the sight of those men, so splendidly smart and efficient, made our hearts go up with a bound, and we fought that day as we had not fought for months before; but if they had been all rusty and dirty it would have been a very different story, for our men were very full of doubts that morning."

MESSRS. MASKELYNE AND DEVANT are inviting convalescent soldiers and sailors to their entertainment at St. George's Hall. Reserved seats will be given, free of charge, to any convalescent soldiers and sailors who ask for them. This invitation holds good for any performance until the Easter holidays.

CORRESPONDENCE.

THE GERMAN RESERVE.

To the Editor of LAND AND WATER.

SIR,—There seems to me to be one possible loophole in Mr. Belloc's calculation, of which a supporter of the larger—four million—figure as that of the German reserve might avail himself. Of the 12,000,000 males who enter into the calculation, Mr. Belloc disposes of 25 per cent., that is 3,000,000, as the usual proportion of persons unfit for military service. Of the rest, 2,000,000 at least are needed to keep the mechanism of internal industry going. But would not the aforesaid 3,000,000, or a very large number of them, be competent to do even hard civil work, though unable to endure the exceptional severities of a military campaign? Or, if by themselves they were unequal to the burdens of industry, would not they, with the addition of 1,000,000 completely able-bodied men, be able to do as much as the 2,000,000 which is Mr. Belloc's figures? In that case the Germans would have put into the field 5,000,000, be keeping 4,000,000 men for the running of the country, and possess a reserve force of 3,000,000 men.—Yours, etc.,

J. K. MOZLEY.

Pembroke College, Cambridge.
January 25, 1915.

To the Editor of LAND AND WATER.

DEAR SIR,—May I venture to indicate some factors which seem to have escaped Mr. Belloc's attention in his "further note on the numbers of the German Reserve" in your issue of the 23rd instant?

Mr. Belloc says: "We have not got to guess, we know the total number of adult males of military age from twenty to forty-five years inclusive, in the German Empire." But the German authorities would seem to have cast their net over a much wider period than this. Youths of eighteen, and even younger, seem to have been called to the colours; nor does the age limit of forty-five appear to apply, judging from the description we get of prisoners taken.

Again he says: "We know that at the very least two million of able-bodied men must be retained to 'run the nation.'" Surely, much of this most necessary work can be done, and well done, by men physically unfit for military service.

Thus, Germany's potential reserve of men would seem to be appreciably larger than Mr. Belloc's contention would allow. But there is another side to the question.

Germany may be able to call up and drill these men. She may even be able to officer them quite as well as we are able to officer our million. But when we consider the delay and difficulty we experience in arming, equipping and clothing that million, with all the world open to us from which to draw raw material, how much greater must be Germany's difficulty in the task of equipping and supplying with ammunition her potential millions, with her industries stifled and cramped by the silent pressure of hostile sea power?

It might not be prudent to build too confidently on this, but it seems at least probable that our enemy will at most be able to furnish from this source drafts for his existing formations, and that he will be quite unable to form from this material new Field Armies.—Faithfully yours,

GEO. M. P. MURRAY.

Kingstown,
January 24.

To the Editor of LAND AND WATER.

DEAR SIR,—With reference to Mr. Belloc's articles as to the number of men that Germany still has in reserve, particularly his article in the current issue, is there not one point which he has overlooked? From the 12 millions between 18 and 45 he deducts 3 millions as being militarily unfit, and a further 2 millions for "able-bodied men to run the State"; but surely out of the 3 millions there will be a very large number who would be sufficiently able-bodied for the purpose of "running the State." Moreover, there may be a large number of men from among those over 45 who would also be sufficiently able-bodied for the purpose. It seems to me that from the 3 millions and those over 45, Germany ought to be able to provide, if not the whole, at any rate the greater part of the 2 millions required to "run the State," leaving these free to serve in the Army; and if I am right as to this, it would about bring the figures of the reserve up to the number of 4 millions, with which Mr. Belloc disagrees.

It would be interesting if Mr. Belloc could give us his views as to this.—Yours faithfully,

HARRY KNOX.

14, St. Helen's Place, E.C.
January 22.

THE BLOCKADE.

To the Editor of LAND AND WATER.

SIR,—Mr. Belloc asks why the blockade of Germany cannot be made absolute, by which he means why she cannot be cut off from obtaining anything whatsoever that is transported by sea to neutral countries and thence transmitted to Germany, for nothing is reaching German ports direct and, as he admits, we cannot intercept the products of neutral countries contiguous to Germany.

The answer would seem to be particularly easy. We are invited to defy the Declaration of Paris, to make everything contraband without reference to its warlike character or any presumed destination for military purposes, and to apply the doctrine of continuous voyage to everything. To do any such thing would be to betray each and every one of the causes for which, according to Mr. Asquith, we took up arms, the faith of international treaties, international law, and the rights of neutral states. Surely everyone must see how impossible that is.—I am, etc.,

A. A. MITCHELL.

7, Huntly Gardens, Glasgow.
January 19.

THE FORMIDABLE.

To the Editor of LAND AND WATER.

SIR,—In reply to the letter of Mr. John Chadwick about the loss of the *Formidable* and the use of compressed air to prevent similar disasters. I think my best answer is to ask Mr. Chadwick whether he thinks a naval architect of Sir William White's eminence would have wasted his time in talking to such a hopeless amateur as he plainly imagines me to be.

It was part of the necessary intellectual equipment of a Royal Engineer officer to be thoroughly familiar with the principles governing the construction of battleships; and as I spent some two-thirds of my service of forty years in dockyard towns, and had watched the construction and completion of pretty well every type of vessel in the Navy since the laying down of the old *Alexandra*, about 1872, I am quite aware of the structural difficulties he alludes to. But I am equally confident that they can be overcome.

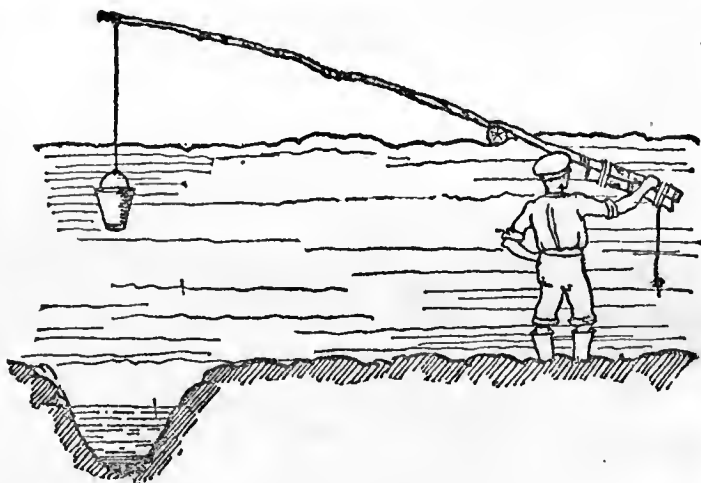
F. N. MAUDE.

WATER-LOGGED TRENCHES.

To the Editor of LAND AND WATER.

SIR,—Numerous letters from the trenches describe them as sloughs of mud slush, into which the men sink sometimes to the waist; others refer to the unavailing efforts made to ameliorate this condition by the use of pumps, due to the muddy mixture deranging the mechanism of the appliances.

Such a problem could be solved by resort to more primitive methods. In Eastern countries and in Eastern Europe and Russia it is customary to raise water from shallow wells and streams by the simple apparatus I will now describe in its application to trench slush, an apparatus which could be constructed in half an hour from materials at hand, and by which one man could dispose of several gallons a minute without exertion.



The materials would consist of a short tree trunk of about four to six inches in diameter, or a baulk of timber, of a length sufficient to rest horizontally from one side of a trench to the other. Alternatively of a tree stump about six to eight feet long, terminating in a Y-forked end. Upon this beam, or within the fork of the Y, is balanced a sapling some 20 to 30 feet long. The butt end is further weighted

by lashing to it a supplementary weight, preferably an additional piece of the butt end or stump. A bucket is attached by a cord to the taper end of the sapling, which is then adjusted upon the beam so that it balances like a see-saw. The sapling should be slightly hollowed or cut away at the fulcrum where it rests upon the beam, to prevent it from slipping.

Immediately beneath the bucket a sump should be dug out, into which the slush will drain. The operator stands at the butt end, and by raising this the bucket descends into the sump, where it fills, and is then raised by a downward pull upon the butt end, which may have, if necessary, a short cord attached to it. The filled bucket is thus hoisted well above the trench, and may be swung sideways over the edge, deposited and tipped over by a few deft movements imparted to the butt.

This slight exercise, a relief from the monotony of doing nothing, would suffice to drain and keep dry a considerable section of trench.

The accompanying illustration will make clear the construction of the appliance and its use.—Very faithfully yours,

HOWARD C. CLEAVER.

35, Berners Street, W., January 18, 1915.

THE GERMAN MIRAGE OF 1870.

To the Editor of LAND AND WATER.

SIR,—I have been glancing over the work which was translated and edited by Major-General J. F. Maurice, C.B., about fifteen years ago, on the Franco-German War, written by the German generals who took part in it. It is well worth re-examination to-day, as there can be little doubt that the easy victories therein described have done more than anything to egg on the Kaiser and the Military party in Germany to their present campaign. Here, for instance, is what Lieutenant-General Albert von Beguslawski wrote of the French preparations in 1870:—

"The results of the mobilisation were on the whole so defective that the corps which were already in position at the end of July were imperfectly provided with the needful trains, ambulances, ammunitions, and provision columns, so that the offensive movement planned for the 31st July had to be postponed, and meanwhile the Germans anticipated the French attack. The French fortifications were very insufficiently garrisoned, and themselves were for the most part antiquated and unfit to offer any lengthy resistance to the artillery of the Germans. Of the fortresses on the frontiers, Metz alone had advanced forts, and even these were partly unfinished."

The conclusion of this German general's remarks upon the war of 1870 is of interest, since by reversing the names of France and Germany, it describes exactly the position to-day:—

"The challenge of France made the national sentiment of Germany burst into full flame. All internal disputes were forgotten, and the whole German army down to the humblest of the rank and file was inspired by a sense of the righteousness of their cause, and filled with defiant courage, with an assurance of victory, and with the firm determination once for all thoroughly to settle accounts with the old enemy."

Could any better description be penned of the feelings and intentions of the Allies?—Your obedient servant,

J. LANDFEAR LUCAS,
Spectacle Makers' Co.

Glendera, Hindhead, Surrey.

FIELD-GLASSES.

To the Editor of LAND AND WATER.

SIR,—Although the appeal made by my father, Lord Roberts, to sportsmen and others, to lend their race, field or stalking glasses for the use of officers and non-commissioned officers under orders for the front has been most gratifying a very large number of glasses are still required.

Up to the present some 18,000 pairs of field and stalking glasses have been received. These have been carefully examined and classified by an expert before being issued. The names and addresses of the owners are registered, and the glasses themselves are engraved with an index number in order that the owners can be traced at the conclusion of the war and their property, when possible, returned to them.

Many people who did not possess field-glasses felt that they would like to contribute towards the fund which has been raised for the purpose of purchasing them, and sent cheques instead.

My father was deeply grateful for the generous response

made to his appeal, but at the same time he realised that an even greater number of glasses would be required, the stock in hand being nearly exhausted, while the call for them was continuous. He had made up his mind to appeal to the public once again, and a letter to this effect had been written, but not signed, before he left for France. I therefore venture to make this further appeal in his name.

All contributions will be dealt with in the same way as formerly and duly acknowledged.

It is important to note that all glasses, cheques and communications should be addressed to the Secretary, National Service League, 72, Victoria Street, Westminster, S. W.—I am, Yours faithfully,

AILEEN ROBERTS.

WHAT OUR CHEMISTS ARE DOING.

To the Editor of LAND AND WATER.

SIR,—Letters such as the one in your issue of the 23rd inst., signed H. J. C. Grierson, unless contradicted, do much harm; they make people think that everything our Army has is inferior to that of the enemy. He states that "we have been caught again with an inferior armament, shells, torpedoes, etc." I cannot speak with authority on torpedoes, but I fancy when we come to use them they will be found not wanting. I have served for forty years in the Royal Artillery, so know something about guns, and can state that our shrapnel shell and fuzes are superior in every way to those of the Germans. Only this morning I have received a letter from an R.A. officer who has been out since the beginning of the war, and in it he says:—

"The high-explosive of the 6-inch howitzer is a wonderfully good shell. It always detonates even on the softest ground, and with great effect. I have never seen any German shell, even the 11-inch they had up at Ypres, to equal it for force of explosion."

I think this is an answer to his question, "What are our chemists doing?"—Yours faithfully,

R. A.

THE ADRIATIC.

To the Editor of LAND AND WATER.

DEAR SIR,—As a very interested reader of LAND AND WATER for many years I take the liberty of asking for a little more information regarding the operations in the Mediterranean.

In a recent issue Mr. Jane states "that the Allies have made no attack because they have had nothing to attack." Surely, if the enemy Fleet is not in open water it must be lying in Pola and Cattaro, neither of which ports would seem proof against guns of large calibre, and the only conclusion one can come to is that our attempt to reduce these places bears a very poor comparison with the Japanese methods at Kiaochow.

I feel sure that numbers of your readers will be glad to hear from Mr. Jane on this matter, as I have met such quantities of interested people who seem to think that a veil is drawn over doings in this particular area.—Yours truly,

J. A. BURNS.

Abbey View, Dalkey, Co. Dublin.

A STUDY IN SELF-EXPRESSION.*

Though concerned largely with sociological problems, and this in no dreary and wearisome fashion, the dramatic personæ of this novel are not made subservient to the theme, nor allowed to be merely pegs on which to hang ideas of social reform and other things. Philip Crayford, pathetic in his solitude, is the central figure, albeit his dominance is more felt than insisted on. We feel his son Paul, around whom the story is woven, to be altogether a lesser though probably more arresting character, and the author has given us a fine study of the young man's groping for self-expression, reaching out towards his ideal, and coming to its attainment through apparent failure. The feminine characters command less sympathy; it is not easy to see Joan Altrington, the principal woman character, with Paul's eyes, for to us her innate worldliness, covered with a gloss of sentiment, render her an improbable source of inspiration. It is a relief to turn to Mrs. Kennaird, sincere, though lacking Joan's inbred delicacy.

Taken altogether, there are many types here worth considering, and we commend this book as a thoughtful and really interesting work.

* "The Young Man Absalom." By E. Charles Vivian. (Chapman and Hall. 6s.)

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THROUGH THE EYES OF A WOMAN

The Garden in War Time

EVERYBODY loves a garden, and one of the outward and visible signs is the writing of many gardening books. The possession of even a few yards of ground seems to draw its owner towards the craft of the pen. People who in the ordinary course of events would have remained silent feel inspired to record their gardening experiences. They are helped out on every side. Nearly all the great poets have expressed beautiful thoughts in beautiful language on man's "purest pleasure." Some personal notes, combined with aptly chosen quotations and attractively illustrated, form the somewhat slight basis of many a gardening book—and, what is more, many a gardening book that is infinitely well worth the reading from every amateur's point of view.

Quite recently one of the more modest of these publications reached me. It was a small booklet of perhaps sixteen pages, and there was not a dull word in it from start to finish. The history of gardening was its fascinating subject, and the writer had evidently made it his very happy hobby as well as study. There was a delightful note of personal enjoyment through every one of his strictly limited pages.

The war news that morning had not been particularly cheerful, and this booklet seemed to promise a welcome relief from war-time thoughts. And so it proved for a short while, until in course of time the writer traced the history of gardening from its earliest beginnings to the sixteenth century. At this time we learn the garden of a house was as important as the rooms of the house itself. Every housewife was her own manufacturer. Through the good services of her garden she made cordials, potions, preserves, lotions, essences, and soaps. Every foot of ground was cultivated, and all that grew had its very definite purpose. It must not be wasted, but in course of time gathered and used in the making of some household necessity.

Then once more the mind played its accustomed trick. Try though we will, touch on any topic we may, one and all lead back to the same absorbing subject. Even this picture of a sixteenth-century garden followed the inevitable rule, and thought turned from it to the war. As time goes on we are all bound to think more seriously of the food question. Unlike our ancestors, we no longer manufacture at home. We are dependent for our daily bread upon many sources, most of which are beyond our immediate control. It would look as if our forebears had infinitely the best of it. And that being so, can we in the present day, in any way, follow their example.

Gardening as a Business

We seem to have wandered far from the time when everybody baked their own bread, killed their own meat, and furnished all the contents of their store cupboards themselves. Instead, we deal with some great store which supplies us with every detail from flour down to boot buttons. Numbers of people live in great towns possessing not so much as one half-inch of land, while even those who live in the country have little notion of turning their land to their profit. And the result is simple. We are all the slaves of fortune. We depend upon others for every necessary of life. It is an artificial way of living, and is therefore at any time likely to be upset by an artificial set of circumstances. A gamble in wheat in the United States of America spells privation in many a home in England, and so do other causes equally as wanton.

This is the eleventh hour, and it is too late to fundamentally change the mode of living of millions of people. It is not too late, however, to husband every resource we have. The lucky possessors of gardens can see that every square inch is utilised and that none of the produce is wasted. They may, indeed, if good fortune be with us, find they have never enjoyed their garden to the full until this present year of grace. Gardening as an amusement is one thing, but gardening for both amusement and benefit is another. Every cabbage has its economic value now. It is a more important vegetable than it was a short twelve months ago, when flippant folk looked upon it as an evil, but fortunately an unnecessary one. Potatoes, again, deserve far more consideration than has hitherto fallen to their lot. We can hardly cultivate too many or give them too much space, even if we abandon some of our flower beds to do so.

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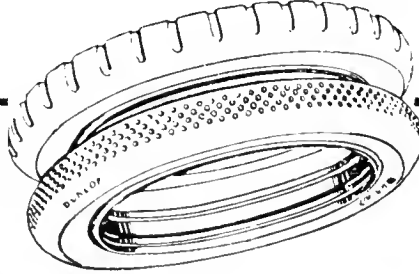
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(Continued from page 244)

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"THE Englishwoman's Year Book and Directory, 1915," is divided into two parts: one including education professions, and social life, and the other being mainly devoted to philanthropic effort in its many manifestations. One of the most interesting features is the table of "Records for Women," showing how all along the line women are breaking new ground in those professions and honours previously supposed to be exclusively men's privileges.



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By HILAIRE BELLOC.

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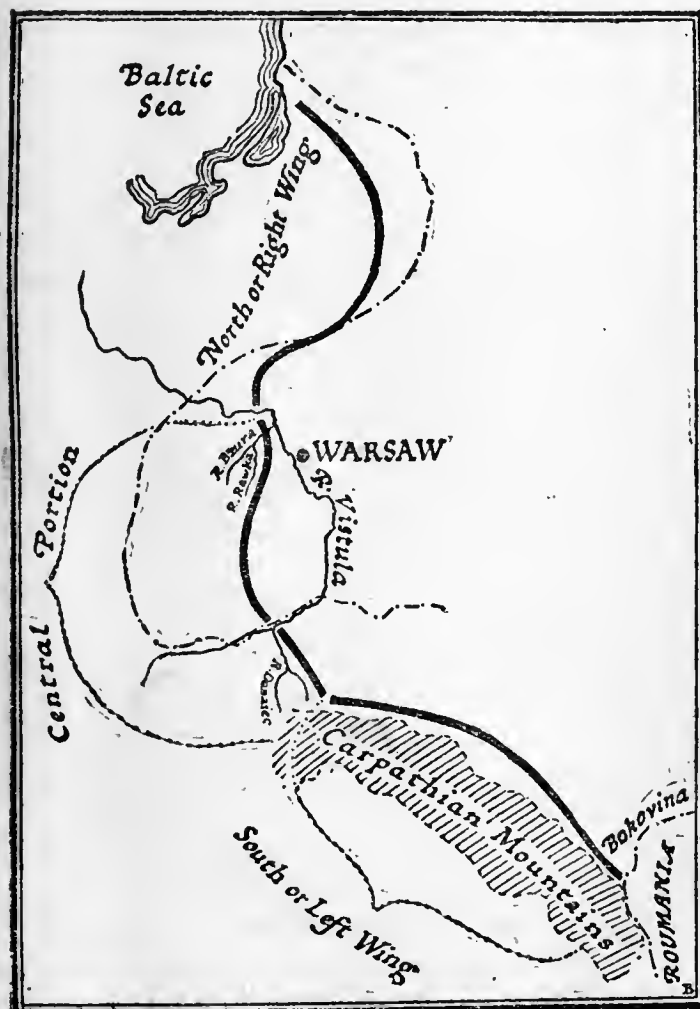
THE EASTERN FIELD.

IN the eastern field Russia has now developed a plan the elements of which are quite clear, though the counter-moves of the enemy are as yet only partially developed, and the factors making for success or failure are still quite indeterminate.

The plan is, briefly, to hold the centre with no more than sufficient troops (even in front of Warsaw), and to attack—with political as well as purely military objects—on the two wings.

The opportunities and difficulties of these I will discuss separately.

Upon the immensely extended line a thousand miles long in its total trace, counting its recesses and local salients, the Russians have endured as to all the centre a violent offensive, the culminating sector in which has been the fifty miles immediately in front of Warsaw along the Lower Bzura and its tributary the Rawka. This offensive, though still renewed, has failed, and is probably nearly exhausted. It has cost the enemy very heavily in men, probably in men permanently disabled or killed or prisoners along the whole Polish line, as many as a quarter of a million—perhaps more. The difficulties of ambulance, especially in the centre of Poland, have rendered unusually high the German permanent losses, and correspondingly low the number of the wounded who will ever be able to return to the colours.



But the enemy, upon the model of his similar action in the West after similar failure there, has entrenched himself and has begun to depend upon the support of heavy artillery for the maintenance of his entrenched position. These trenches run from the Middle Vistula to the Upper Vistula, a line not far from straight and approximately 160 miles long. From the Upper Vistula to the Carpathians the front continues just along the Donajec river, then up a tributary, the Biala, up to the foothills of the Carpathians, and here a certain amount of continued trench work, but more the balance of artillery and the vile weather, keeps it stationary.

It is this length of line from the Middle Vistula near the mouth of the Bzura to the Upper Biala (a tributary continuing the Donajec line)—say, 200 miles or more—which may be regarded as the centre of the whole vast scheme; and that centre is for the moment immobile. The Germans and Austro-Hungarians, who are in much larger numbers here than their opponents, cannot advance further than the line so drawn up, not even in front of Warsaw.

But on either side of this centre are two wings, differing greatly in character, and it is upon these two wings that the Russian movement is taking place. The southern or left Russian wing runs all along the base of the Carpathians from the upper torrent-reaches of the Biala to the borders of Roumania: that is, to the district called the Bukovina, Austrian before this war in political definition, Roumanian in population.

All along this left or southern wing the Russians are more or less advanced into the mouths of the Carpathian Passes. They do not hold the summits of any one of them, and against the efforts they are about to make in this region—particularly from the Bukovina—the Germanic Powers are massing very large forces, the nature and the chances of which will be discussed in a moment.

On the northern or right wing of the immense Russian line the situation is as follows:—

There are three sectors:

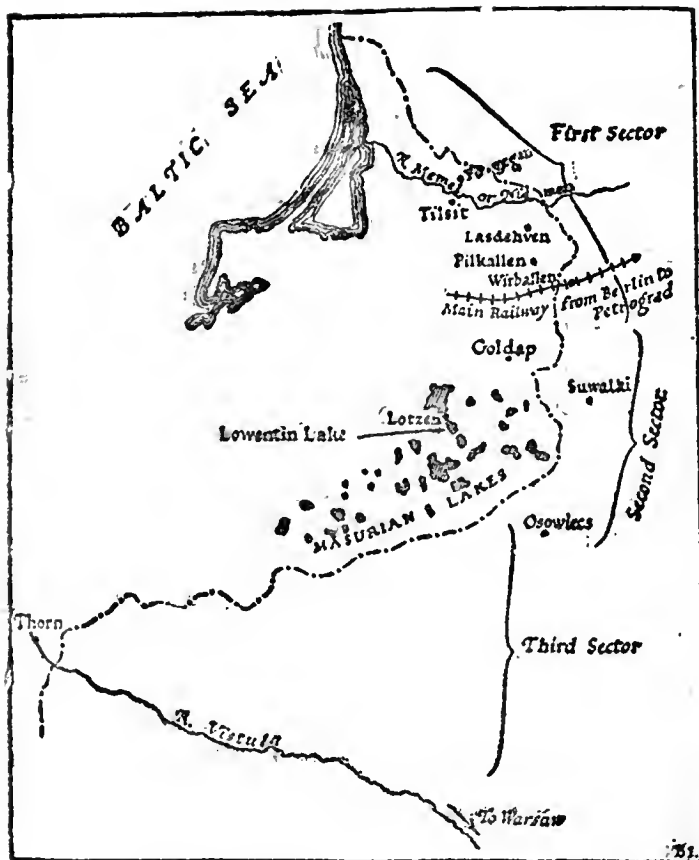
(1) The district between the Vistula and the East Prussian border, a district in the form of a wedge, a hundred miles broad at its base, dwindling to nothing at its apex in front of Thorn.

(2) A front upon "the region of the lakes," this front stretching roughly from Goldap to Osoviecs. This front is about sixty to seventy miles broad.

(3) Finally, there is the northern sector running right up to the Baltic and measuring about 100 miles or a little more in extent.

With these elements clear we can study our Ally's plan as it appears to be conceived for the immediate future, and the enemy's apparent counter-plan so far as this has developed.

But before taking either of these movements upon the wings in detail, we must appreciate the most general conditions under which the whole struggle must take place for at least four months



—that is, so long as winter keeps the external Russian ports ice-bound.

(1) The first of these conditions is, the restriction of our Allies in the matter of equipment.

There is no great mystery about this, and it has often been mentioned before in these comments, because the judgment which is so necessary to public opinion in this severe struggle depends upon our just appreciation of it, and because in this case the facts are a great deal better known to our opponents than to any civilian centres among the Allies. Briefly, all the Allies began the war short of the full equipment and the full reserves of ammunition which it has proved to demand, while the enemy began the war *not* with the full equipment and reserve of ammunition which the war has proved to demand—for it has far exceeded his expectations—but with a great deal more of both equipment and ammunition than we had. The reason of this is perfectly simple. Berlin wanted war and has prepared for it during the last three years with the greatest secrecy and energy and has declared it at exactly her own moment, subordinating everything to that one end, while the Allies have only considered war during that period as a possible catastrophe to be avoided by every means in their power, and surely to be successfully prevented if another crisis should accidentally arise. The whole thing is as simple as any one of the corresponding problems that continually arise in daily life. A knows that B wishes him ill, but he is not going to give up his normal occupations in order to devote himself entirely to the ruin of B, because he has often called B's bluff in the past and because, judging other men from himself, he cannot believe that B is going to give up everything for the sake of attacking him, and because it is no part of healthy living to devote one's entire time and opportunities to a struggle which may never take place. If Europe were a chaos and nations a band of cut-throats, then the obvious policy for England and France would have been for both these countries to go to war some years

ago before the creation of the heavy howitzer, when the French had submarines and the Germans none (an interval of several years), before the Germans had developed their Fleet, and when the French Army had the new quick-firing gun and the Germans the old gun, which could not stand up against it for a moment: again an interval of several years. But to force war like this with the mere object of destroying another member of the European family is not in the morals of the West. It is only with reluctance that even now a minority of the West (outside France) has come to regard Prussia as an outlaw.

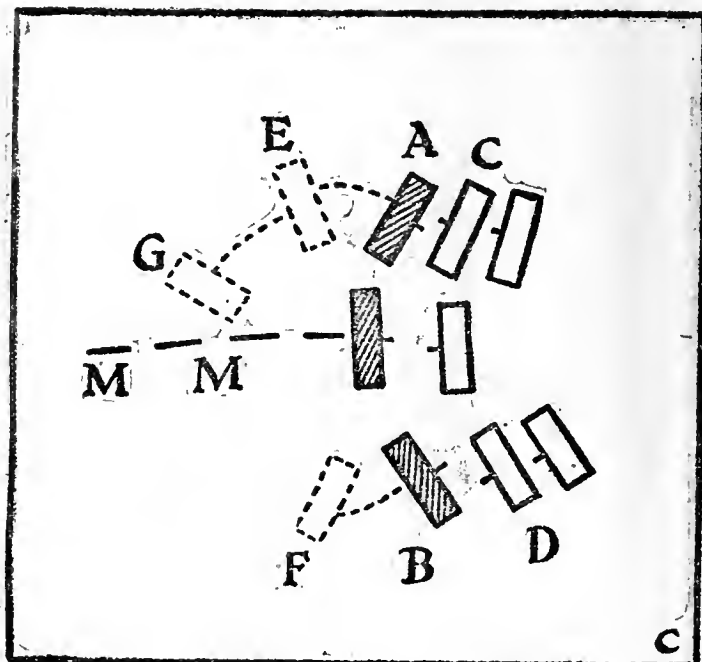
Under such circumstances it was inevitable that the anarchic Power keeping its efforts secret should begin the struggle with a great advantage in equipment and in reserve of ammunition. Luckily there went with its plans what nearly always happens with too frigid a calculation, to wit, an exhaustion beyond the point to which calculation has reached: an inability to face unexpected issues. The enemy allowed for, at the most, six months of war. He calculated that the Austro-Hungarian forces would hold up without disaster a Russian advance; he under-estimated the expenditure of ammunition, and he did not allow for a blockade, even such a partial blockade as has been imperfectly established. He is therefore himself handicapped from now onwards, but he was able to put into the field more men than the Allies during all this first and second phase of the combat. He still has more men, and that leads me to my second point with regard to the eastern field.

(2) The Russian plan is not a plan of envelopment, for a plan of envelopment is impossible with inferior forces, and the number of Russians equipped and at the front between the Roumanian frontier and the Baltic is certainly less than the number of the enemy opposed to them.

But if this dual attempt on the extreme north and on the extreme south of the extended line is not an attempt at envelopment, what is it? *It is a plan of embarrassment and division.*

In order to explain that definition we must first define what envelopment is.

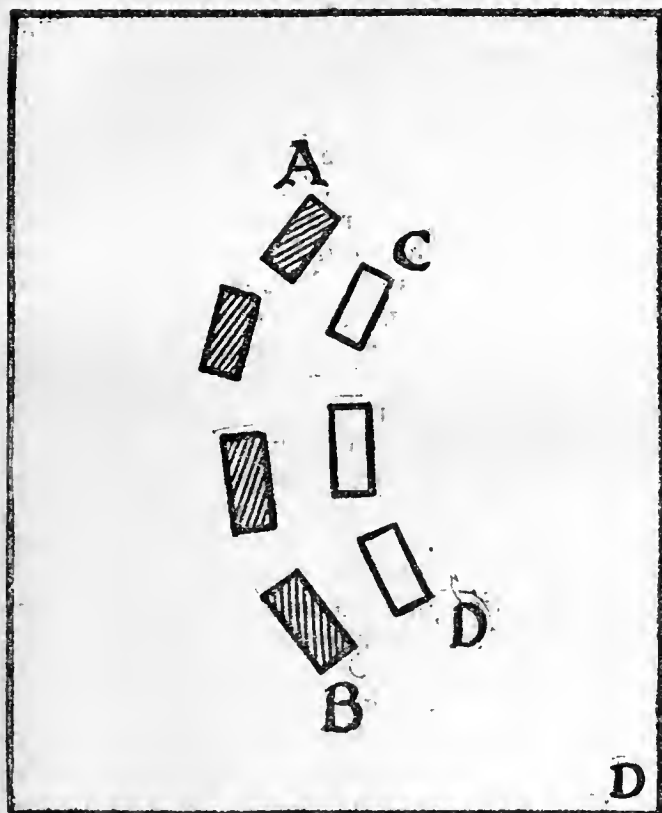
Supposing you had on this huge semi-circle



from the Baltic to the Carpathians the enemy along A-B counting as 3 and our Allies

along C-D numbering 5; then by massing the extra two units at either end they would begin pushing the corresponding ends of the enemy back. A would fall back to E, and B to F. The pressure would continue because there would always be superior forces against the enemy on either horn of the crescent and the enemy could not reinforce either horn without danger of having his centre broken in because his numbers would be too small. He would be pressed back and back until with the advance reaching, say, G on the north he would be in peril for some one of his great lines of communication, such as M-M. Long before that happened he would have had to fall back with his centre and with his other extreme as well. If he did not fall back in time his centre would be cut off and at least one part of his line—perhaps the whole of it—would be swamped.

But if things are the other way about, and if A-B counts as 4, while C-D as yet only counts as 3,



there can be no question of C-D acting in this fashion. By the time he had massed men at either extreme, C or D, leaving only just enough men in the centre to hold firm, he would yet not have men enough at either extremity to maintain a continuous and successful advance indefinitely. The enemy could easily mass men to stop him by withdrawing forces from their own centre (which they can well afford to do), apart from the fact that their lines at the extremities are already stronger than his.

Indeed, C-D upon a field of battle would be foolish indeed if he attempted any such movements upon the extremities in force.

But a line a thousand miles long passing through very various political areas is not like the field of a single battle. It may offer political opportunities of which the weaker force can take advantage. This happens to be the case in the eastern field to-day. At A and C you have that province of East Prussia upon which German opinion is more sensitive perhaps than any other part of the national soil. It has already suffered invasion, and though the Germans won a great victory at Tannenberg five months ago, and drove

the invaders out, there is a lively recollection of the event throughout the Empire. The great estates were raided, the peasantry (who are half servile in condition) rose in revolt against the Prussian squires and looted the country houses; there was a stampede of refugees to Berlin and very heavy material damage done. On the other end of the line at D-D you have two important considerations embarrassing the enemy. The first is that the presence of the Russian forces in what is nationally Roumanian territory more and more urges Roumania to move, and Roumania has half a million fresh men admirably trained and equipped. On what is politically Hungarian soil, and still free from invasion, at least three million men of Roumanian blood and speech inhabit the eastern slope of the Carpathians and naturally attract Roumanian interference. It must not be forgotten that here, as everywhere, the Germanic Powers as a whole stand for the principle of subjecting populations to an alien Government; the Allies stand as a whole for the reconstruction of the minor nationalities in Europe.

The second consideration embarrassing the Germanic Powers at the southern extremity, B-D, is the peculiar position of Hungary. Hungary was as much the cause of the war as anyone, for Hungary claimed to keep subject Servians and Roumanians against their wills, but the Hungarians have no cause to sacrifice themselves for the Germans; they are something quite apart, and, as was shown in these notes some time ago, the gravest political weakness of the Germanic Allies consists in this necessity they are under of placating this outlier, the alien, suspicious, and now actively discontented Hungarian element on the outer edge of their body. If Hungary went the remaining half of the Dual Monarchy would be almost compelled to make peace, and when that had happened Germany certainly could not hold out.

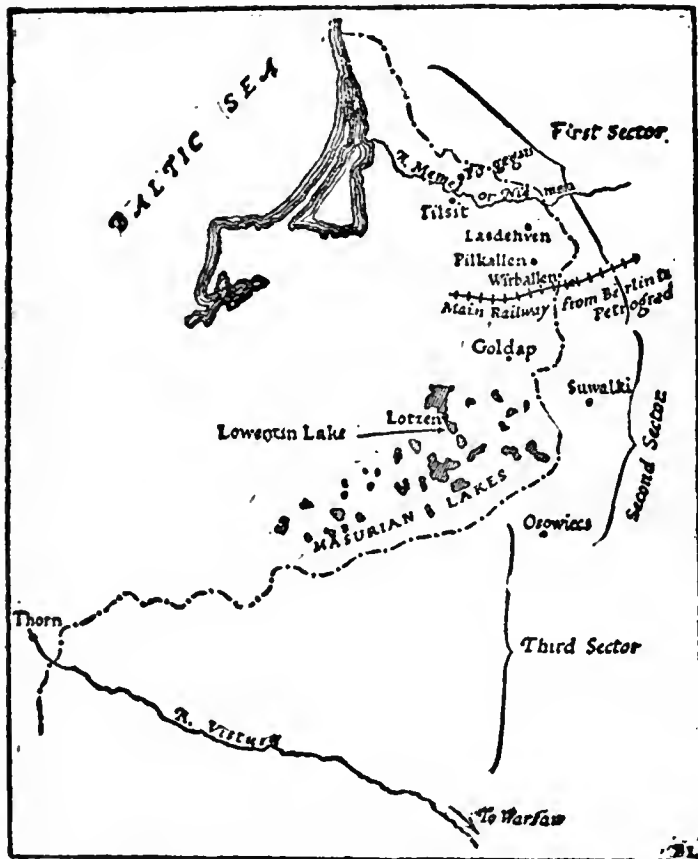
We talk continually of the war as though "Germany" were the only enemy. We too often forget that the forces of our enemy are nearly doubled, their reserves more than doubled, by the alliance of Germany with Austria.

Now, an invasion, though it were but partial and temporary, of Hungary by Russian forces through the extreme passes of the Carpathians, or by Russian and Roumanian forces combined, when Roumania enters the field, might just prove that extra straw on the camel's back which would detach Hungary from the alliance and break down the whole Germanic scheme.

To sum up, then, Russia attacking at the two horns of the crescent cannot hope to envelop; she has not the men for it. She will not, during the winter months, have the equipment to provide the men for it. But she may perfectly well by causing alarm at both sides of the long line, under the political conditions of those extremities, cause grave embarrassment and division to her enemy. She may make Hungary so clamour for reinforcements that Germany, in terror of losing Hungary, will throw too many men towards the south-east and weaken herself elsewhere. If, while that is happening there is a successful raid going on in Eastern Prussia she may well compel the Germans to reconsider their policy of helping Hungary and fluster Germany into withdrawing troops from the south to secure the north.

On the western lines in France we cause such diversion by attacking unexpectedly at the most widely separated points. Now on the sea, now in the centre at Soissons, now right up in Alsace at the southern extreme. It is a mechanical system which produces perpetual going and coming up and down the German line, and as perpetually wears it down.

In the East, where there is neither railway facility for this nor a closed line of trenches to be broken, there exists what does not exist in the West, and that is grave diversity of political objects at the extremes of the line, and it is of this that our Allies in the East are taking advantage.



I.—THE EAST PRUSSIAN FRONT.

The Russians at the beginning of the campaign, when the number of their equipped men was inferior to that which it has now reached, dared not attack north of the central section of the East Prussian front. It is never safe to separate an isolated body too far from your main line, and had the Russians in October and November attempted to work much further north than Wirballen, their forces would have been too extended or would have had an isolated portion to the north. Somewhat increasing numbers, as equipment slowly grew, have permitted them to act nearer to the Baltic.

Now, this is of great importance. The middle district from Wirballen southward between Goldap and Suwalki towards Oswieci is the region of the lakes. It is one tangle of defiles between endless pieces of water of various sizes, and marshes. These defiles are both fortified and thoroughly studied by the enemy. But to the northward of the main railway line the country is more open. There is a certain amount of marsh, but the further north you go the easier the ground becomes.

The political centre of all this district is the town of Tilsit, famous in Napoleonic history, and it is upon Tilsit that the most northern new Russian move is converging. Though Tilsit is only

fifteen miles or so from the frontier (less from the very nearest point), its occupation, should the Russians be fortunate enough to force their way there, would be of considerable effect, not only because of the political blow struck, but also because forces diverted to prevent a continued advance over the Niemen (which the Germans call the Memel) would be working very far away from the mass of the German Army. Numerous as the German forces in the East still are, they cannot be everywhere, and it is almost certain that in the attempt to defend East Prussia the Germans would pile up in the north an excessive number of men.

The movement has for the moment only begun, and we have no right to form any judgment as to its development. The Russian cavalry has cut the railway at and destroyed the station of Pogegen, just north of Tilsit beyond the river, an afternoon's walk. In its advance on the town from the south it has reached and occupied Lasdehnen, a small town not more than eight miles from the frontier, and the larger railway junction of Pilkallen, about fourteen miles to the south and not ten miles from the frontier. South of Pilkallen they are still engaged with the Germans in a group of woods which lies between that point and the main railway, and their line runs southward and westward, getting further and further from the frontier until it touches the lake region somewhere apparently behind and south of Goldap. What happens to it in the lake region itself is not very easy to determine. A private message which reached London on Friday last said that the Russians were already in occupation of Lotzen. If this is true it is news of very high importance, for they would there hold the principal defile through the lakes, and the principal railway junction of the whole district. But I can find no official confirmation of such important news, unless the German official communiqué, which told us at much the same time the Russians were repelled from the Lowentin Lake, may be regarded as confirmation: for the mention of a repulse—and no more—in an official communiqué always connotes a more or less successful attack by the enemy. When it is quite beaten—still more if the enemy lose ground—the official communiqués are much grander. The Lowentin Lake is just south of Lotzen, and if there has been fighting along any portion of it then there has been fighting in the immediate neighbourhood of Lotzen; but it is remarkable that no Russian official news should apparently exist upon the subject. Lotzen, it may be noted, is over forty miles within the frontier, and an advance so far would, among other possessions, involve the occupation of the Imperial hunting grounds and country house at Margabowa.

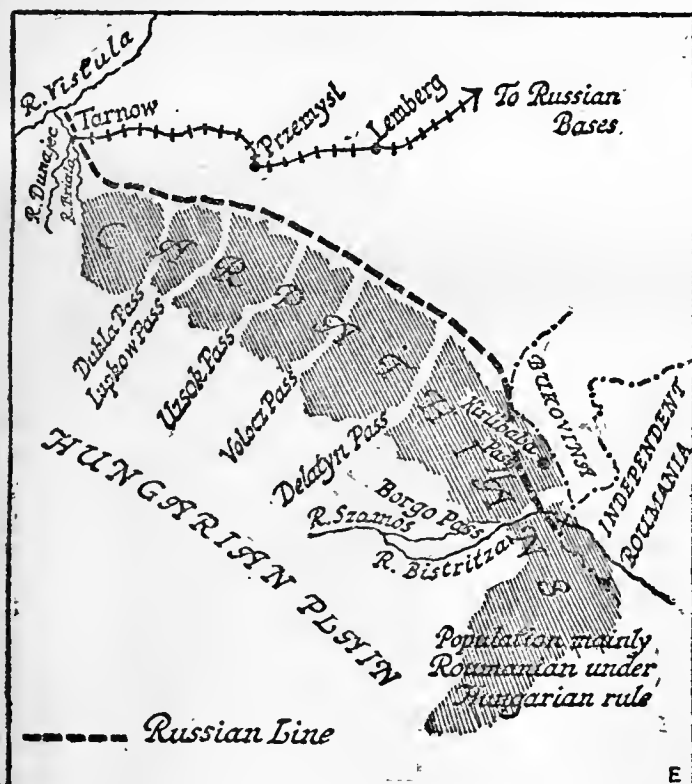
We may sum up and say that on this front our Allies have, over a front of about a hundred miles, penetrated the enemy's territory through a zone of about one day's march, narrowing northwards to less than this; but southwards, where the region of the lakes is reached, extending to much more, to two or three days, or even four days if the private telegrams which reached London at the end of last week are accurate. The amount of territory occupied in this raid is about as much as that held by the Germans in Flanders, reckoning from the sea to the line of the main railway and a little beyond. But the Germans' foremost trenches

near Noyon are one-third more advanced into French territory than are the Russians in East Prussia even if they do occupy Lotzen—and there can, of course, be no comparison between the economic and political importance of the two belts.

I have seen, by the way, in connection with this German advance into East Prussia, the criticism that it would be baulked by the line of the Niemen or Memel. I cannot see how this is the case; that line is perpendicular to the general advance, which is taking place on both banks and with sufficient forces. Tilsit could just as well be occupied from the south as from the north, the only advantage of the attack from the north being that it further embarrasses the enemy and cuts him off by railway from the town of Memel and the sea.

II.—THE CARPATHIAN FRONT.

The effort at the Carpathian end of the line differs in every possible respect, political, geographical and strategic, from the effort on the East Prussian front.



The length of the whole curve, which is the first element to consider, is from the Donajec to the Bukovina, not very far short of 300 miles.

Next, the 300 miles are not a universal front across which the general action may stray; they are, for strategical purposes, a series of defiles, which defiles are the passes over the mountain. There are six main passes from the Roumanian frontier to the basin of the Donajec, and the railway is carried across the range in no less than four. These main defiles are in their order the Dukla, the Lupkow, the Uzsok, the Volocz, the Delatyn, and the Borgo, which last lies in the knot of the mountain system, where Roumania and the Bukovina and Hungary meet. The reader will note upon this line the position of Przemyśl. It lies about forty miles from the summit of the range and about one-third of the way along the whole curve. It has long been isolated

and its garrison blockaded by the Russian armies. The reader will also note the position of Bukovina, the situation of the Roumanian population under Hungarian rule (interspersed, it is true, with Magyar and German elements, which also form, as a rule, the wealthier portion of the community), and lastly he will note the way in which, these passes once crossed, the roads down them lead directly to the Hungarian Plain, which is wholly without natural or artificial defence.

Lastly, it must be remembered that the whole of this fighting is taking place in deep snow, and under the most abominable conditions of weather.

Now let us see what are the positions and the objects of the two combatants. As to position, the Russian line runs everywhere along the foothills of the mountains much as I have marked it, until the neighbourhood of the Bukovina, where the Russian line advances much more closely to the summit of the range, and has, at one moment, actually crossed that summit, though not holding any part of it at the present moment, the furthest point it ever reached being at Kirilbaba, where there is no good road. This means, of course, that the Russians have massed most of their troops (in proportion to what the enemy had to oppose to them) towards the south-east. It seems to be true conversely that the Austro-German attempt would take the form of a special concentration towards the north-west. We cannot know, we can only guess, but the best guess to make under the circumstances is that the enemy will put strong forces in front of the Bukovina frontier to prevent its being crossed (indeed, those forces are already present) and will then make his chief effort across the Dukla, the Lupkow, the Uzsok, and the Volocz. It is obvious what such a swarming northward and eastward from the Carpathian ridge here would mean. It would mean the attempt to relieve Przemyśl and (that eternal objective in all this fighting for months) the pushing of the Russians beyond the main railway, Lemberg-Przemyśl-Tarnow, by which alone an army in Galicia—particularly in a winter campaign—can live.

Which of the two forces has the better chance of success we cannot yet possibly determine. We know that Germany has lent at least two corps; we know that Austria-Hungary has called up the heaviest force she can possibly spare; we can safely conjecture that pressure upon Serbia has been removed (I believe the information upon it to have been false, as I said in these columns a week or two ago); we know that so far the pressure has been strong enough to prevent a further Russian advance into the hills, and, up to the time of writing—Tuesday evening—that is all we know. The near future will tell us both whether Russia alone can force any of the passes and also whether Roumania will come in, in time. But note this. If the Russians do force in any numbers any one of the passes they have done the trick, for in this field alone they have better lateral communications by railway than the enemy, and the country beyond the hills is vulnerable in the extreme. Put a Russian Army, for instance, marching down the valley of the Szamos or the Bistritza, and quite certainly the enemy's forces on all the northern passes—leaving no more than just enough to hold them—will turn back south to challenge the invaders of Hungary.

THE WESTERN FIELD.

IN the western field there has been a series of those attacks and counter-attacks which have upon the side of the Allies the object (and upon the whole the result) of slowly wearing down the enemy's numbers in greater proportion than the losses sustained against them, but the actual movements recorded have been quite insignificant and merit neither illustration nor particular analysis.

The most conspicuous have been the very violent attack in the region of La Bassée, the capture of the big dune or sand hill just east of the river outside Nieuport, and the rather heavy work in the Argonne, in which one line of French trenches was taken and the French lost ground for about two hundred yards.

The most remarkable point about these various engagements has been perhaps the heavy German loss connected with the days immediately preceding and coincident with the German Emperor's birthday.

It is not a very great matter nor a very material one, but it is curiously worth watching on the part of any student of this war, that the enemy adds to his high military efficiency little marks of superstition or non-military motive which throw an interesting light upon his psychology of war.

One cannot imagine a modern French commander acting in this fashion or in that because it is July 14th or the anniversary of Austerlitz, but we have the Germans crossing the frontier on the same day and hour as in 1870; making Sedan Day coincide with the daring (and luckily disastrous) march across the Allied front near Paris, comparing a brigade action with Gravelotte "because it had the same frontage in kilometres"; and now wasting a number of men in three days which had no direct military significance, but which happen to coincide with the Emperor's birthday: as though it were part of the business of war to give one's commander-in-chief a present, and that present a sacrifice.

It is not wise to ridicule too much this not logical and not material sentiment in war: this touch of superstition. One certainly cannot connect it with rational plans, but no one will deny to the enemy a great excellence in drawing up and maturing such plans. The touch of non-rational motive which you find added to such plans, both by individuals and by nations, usually connotes a high exaltation of feeling, and it is an indication of the enemy's mind which must not be neglected. We shall probably find examples of it recurring in the future of these campaigns. If it is exaggerated it will be all in our favour.

The capture of the great dune will prove of importance if it gives the Allies a sound gun position. That it does so as against the plain to the east is obvious. The Dunes run in this region between the main road and the sea, and behind the main road is a flat, cultivated and pasture country full of water, meadows and ditches and traversed by the main canal between Nieuport and Ostend. From any conspicuous one of these numerous sand hills, once its summit is occupied, there is a clear range eastward as far as, say, Slype, 7,000 yards away, and southward well beyond St. Georges. But what one cannot tell, what no one can tell unless he is on the spot, and cannot always tell

then, is the relation of the position to other positions amid these tangled heaps of sand bound together with coarse grass, which line the whole of that coast for fifty miles. It may be that the position here captured is of such importance that it will permit a steady advance eastward along the main road, more probably it will meet opportunities of resistance eastward among the low heights of the same formation and will not seriously advance our offensive upon this extreme flank of the enemy.

The fighting in the Argonne bears out what was said in these notes last week: that the enemy would continue to make vigorous efforts in the woods west of Verdun, because one part of his plans must be the attempted investment of that fortress when he can bring up his new formations. Perhaps it would be more accurate to say: "Because one of his commanders is advising the ultimate attempt to procure such an investment"; for there is and will continue to be upon the side of the enemy a series of disconnected plans each dependent upon a different commander. That is quite evident from the way in which for now three months the enemy's energy has been spent upon one point after another, not only as opportunity seemed to suggest, but as individual Generals obtained the ear of the chief command, or were left free to act each in his own region.

Beyond this there is nothing to be said with regard to the western field at the moment of writing—Tuesday evening.

THE COMING GERMAN OFFENSIVE IN THE WEST.

Although it is true that nothing is less easy to forecast than the course of a war, yet there are sometimes circumstances in which one can be fairly certain of the general course which warfare will take when a particular campaign has reached a certain point in its development.

For instance, when one of the French armies was contained in Metz (in 1870) by the Germans, and the only other regular forces the French possessed had been captured wholesale at Sedan, it was so obvious that the next German move would be an advance on Paris that no one concerned with the defence of the French allowed for any other issue.

The next development of our enemy's plans is not quite so obvious as that; but it is fairly clear that this next move will be a very heavy assault upon the western line in the hope of breaking that line.

The reasons for this are fairly obvious; the enemy is aware that the French are working with a large strategic reserve. He is also aware that Great Britain has, more and more ready day by day as equipment increases and as training is perfected, another reserve consisting of new formations, and one which in future can grow, not indeed indefinitely, but up to limits far beyond what was expected in Germany when the war broke out.

His total reserve of men is not 2½ million. Many converging lines of proof and reports which are believed to be reliable in the West combine to put the German "disposable" reserve which has not yet been put into the field at no more than two

million of men. The enemy is not certain of the quality of the British new formations, or of their rate of equipment. Sometimes he seems to make calculations upon these too favourable to himself. But what his real judgment is we can hardly tell, because we only hear the official accounts put forward to affect opinion within Germany itself and to affect the opinion of neutral countries.

At any rate, he knows that if he allows too long a delay to pass he will be confronted in the West with bodies superior in number to his own, and against a superiority of number he believes it impossible to contend; his whole theory of war is based upon the certitude of a numerical superiority. This superiority he still maintains; he knows that he will not now long maintain it. Therefore he must fight.

He must fight rather in the West rather than in the East for the following reasons:—

1. All the resources of the future in everything but unequipped men are to be found in the West.

2. His efforts upon the East have failed to attain the objective of Warsaw, but they have succeeded in keeping his enemy there at bay. And he may presume upon the rigors of the climate to prevent any considerable pressure being renewed upon him in this quarter before the spring. This calculation may not be a wise one; an exceptional period of very hard but very clear and windless weather would probably permit successful action by the Russians on the extreme north of their line. Such action they are contemplating already, but, take the line as a whole, and it is improbable that the enemy believes in the danger of serious peril from the East before the spring.

3. Upon the West, on the contrary, he can shortly come, say, after the next six weeks upon drier weather and upon a better chance for attacking. This is particularly the case in the more inland parts of the line, and the mention of this leaves us to consider where that effort may come.

There are five main fields of action in the 400-mile line between the Swiss mountains and the North Sea.



1. First and southernmost is the district protected by Belfort and the southern half of the Vosges Mountains.

2. Next we have all that region the key to

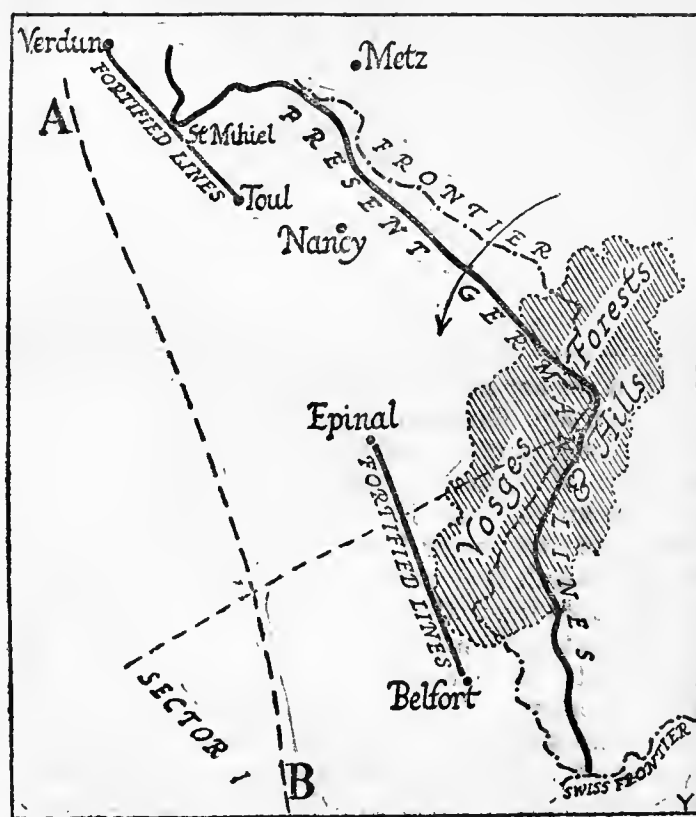
which is Verdun, because the southern part is blocked by Epinal, and because near Verdun alone of the great fortresses are the Germans threatening, an action in which would first require the investment of Verdun.

3. Next you have the open Champagne district west of the Forest of Argonne.

4. Next comes the "elbow" of the line, the Soissons district and all its neighbourhood to the north up, say, as far as the Albert-Arras region.

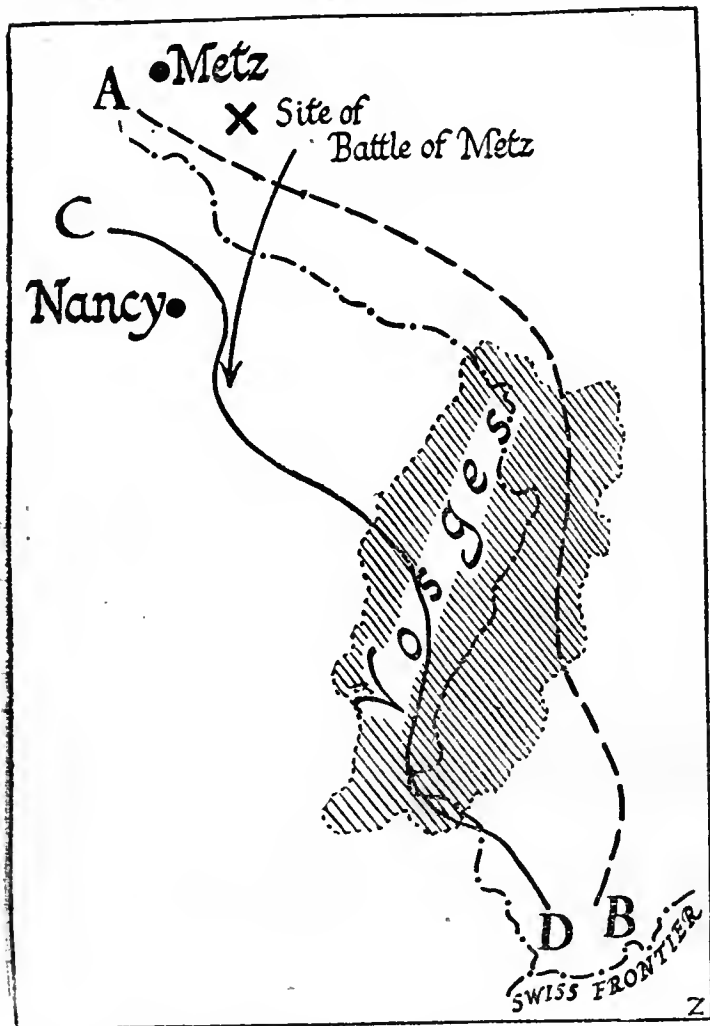
5. Lastly, there comes from this Albert-Arras region to the sea what may be called the Flanders district, including, of course, much territory that is not within the limits of Flanders.

Now, it is absolutely impossible to say which of various opportunities an enemy will take. The whole business of generalship is to prevent an opponent from guessing what you are to do next. But we can examine these five sectors so that, when the shock comes, we may be able to estimate its chances, and at the same time to judge where the attack would seem to be most dangerous. Let us take these five sectors one by one.



1. To attack in mass with their new formations upon the sector of Belfort would have one, and only one, advantage; the success of such an advance would be followed by the turning of the whole French line. It would be necessary for the southern portions of that line to fall back as a whole to some such line as A-B; it would uncover Nancy; it would turn the barrier fortresses; it would isolate or uncover Verdun. Judged in terms of its difficulty, however, and not in terms of its advantage, it would be the most hopeless of achievements of all the tasks the enemy could propose to himself. The Vosges are an obstacle across which only heavy and prolonged fighting would carry the offensive. They were abandoned last summer, and have had to be painfully recovered by the French only because they were turned upon the north. After the battle of Metz, in the region X, in the last ten days of August, the country to the west of the northern end of the Vosges was in the hands of the enemy, and the French line had

to fall right back from the crests of the mountains, as along the arrow, the original French line being A-B before the battle and C-D after it.

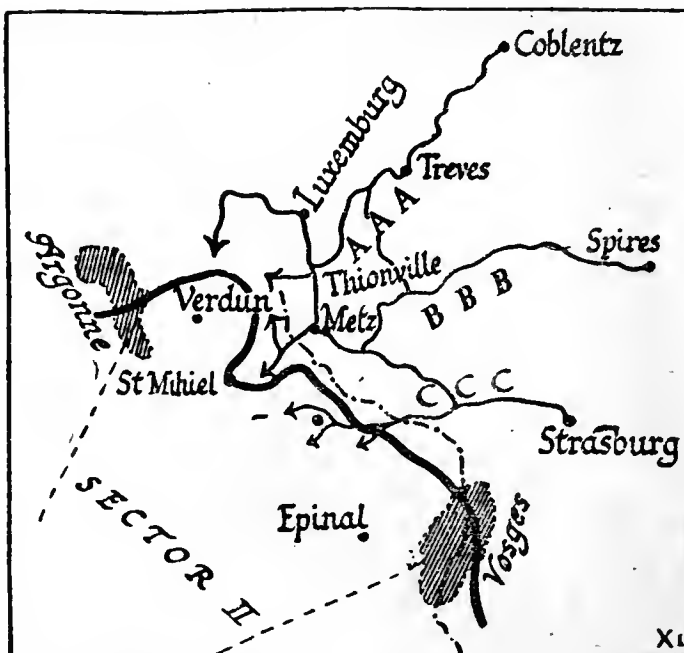


But we are supposing for the purposes of this analysis a new German offensive undertaken with the fullest strength available against one sector of the line. If these new formations should attempt too wide an advance, if they should try at once to attack the first sector from the east and to turn it from the north they could not succeed. The main battle would inevitably develop upon the northern front, and the French from within the angle could concentrate there very much more rapidly than their opponents. The thing could only be done at the beginning of the campaign, and with the advantage of complete surprise at this stage of the war, where every party to it has learned by heart the nature of the fight, that surprise, where a large body of men were concerned, would be absent.

South of the obstacle of the Vosges the first sector only consists in the narrow gap of Belfort, and Belfort is not only among the strongest of the fortresses, but has had six months of leisure in which to develop the new character of siege work: to establish temporary and concealed batteries far outside the old permanent works, and to design a covering trench work all along the eastern half of the circumference of greatly extended fortified zone.

Whether the enemy will think the advantage of breaking the French line here great enough to counterbalance the vast difficulty of the task, and therefore worth while, only the future can show.

2. The second sector, which may be called the sector of Verdun, was already marked in these notes last week as that in which the principal German effort, when it came, might very probably be made. It has at first sight no conspicuous advantages; it involves the reduction of what must



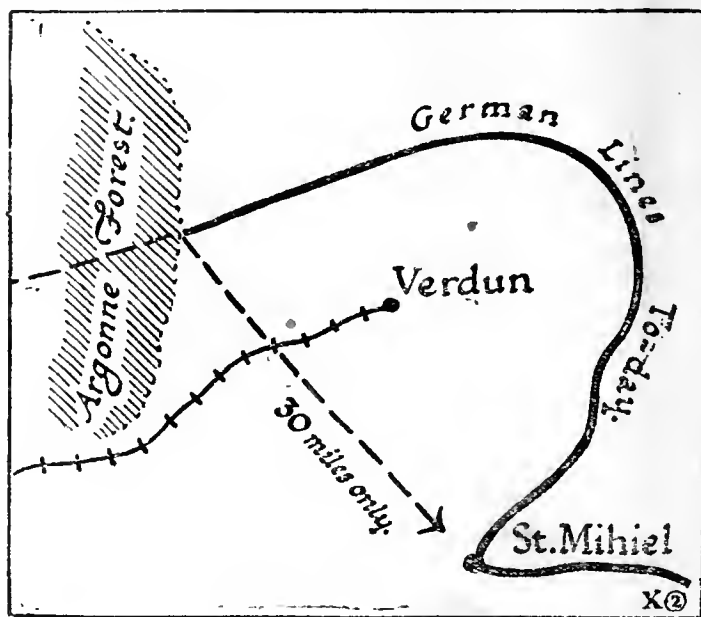
have become in the course of the last few months a most formidable new system of defence, and progress could not be rapid or dependent upon supplies. While it was taking place, moreover, the French should have ample time to concentrate.

But when one looks a little more closely at the problem one may well believe that the Verdun sector would especially attract the enemy.

Apart from the general considerations mentioned last week, there are special points well worth remarking.

(a) The enemy has here very short and very excellent lines of railway communications, as along A-A to Treves and Coblenz, along B-B to Spire, along C-C to Strasburg. Great depots advanced to within a stone's throw, so to speak, of his objective, are available at Luxembourg, at Thionville and at Metz. Very numerous railway lines connect him in a couple of hours with the further bases on the line, and a network of these running north and south, as well as east and west, permit him to mass men very rapidly upon any point of this sector.

(b) The conformation of the line is already such that one particular and successful effort would complete the investment of Verdun. The enemy holds the wedge ending at St. Mihiel, and the line to the north and east of this goes round in three-quarters of a circle. It is only the remaining quarter, or a little more, that has to be joined up to effect the enemy's purpose, and he would, did

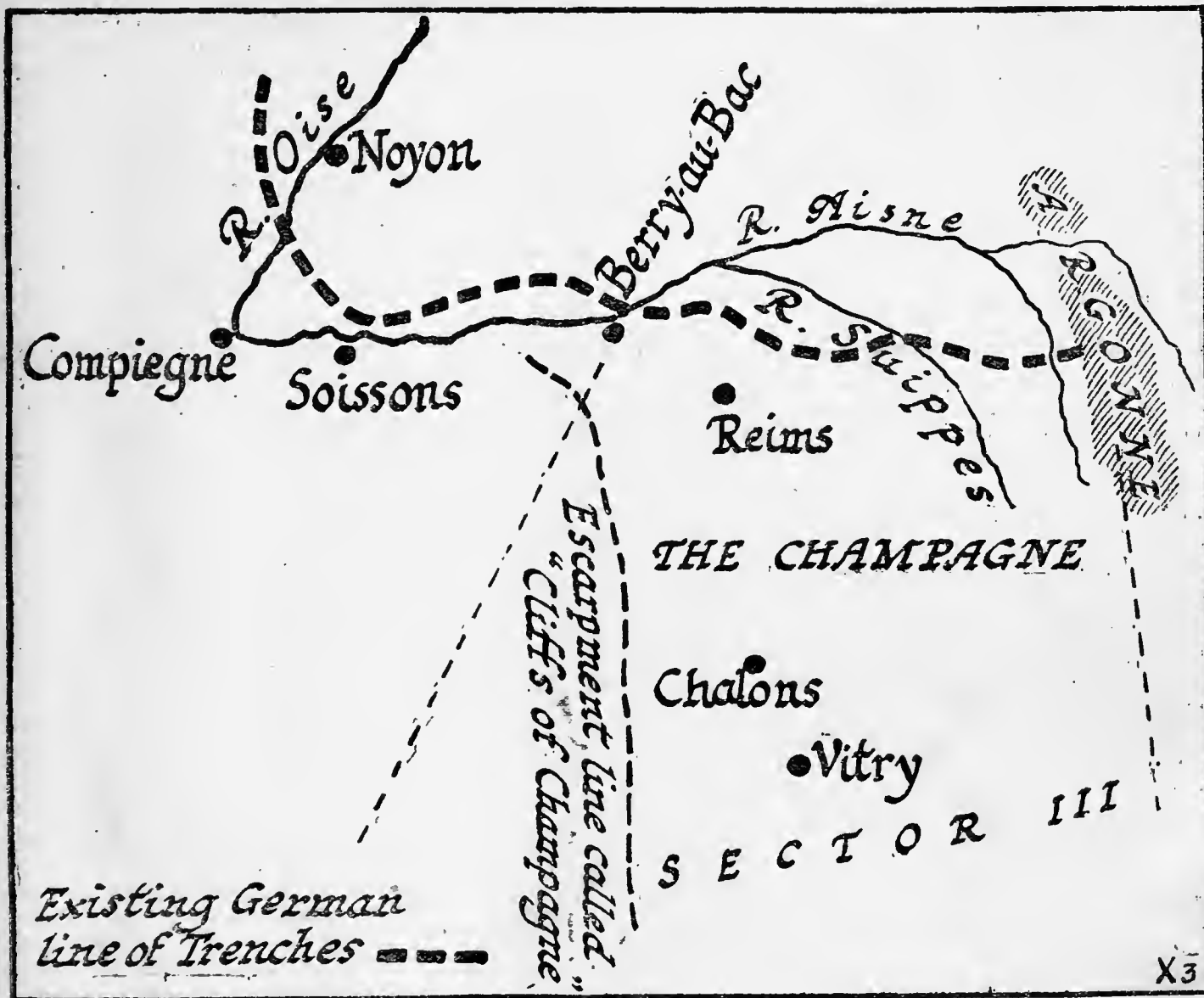
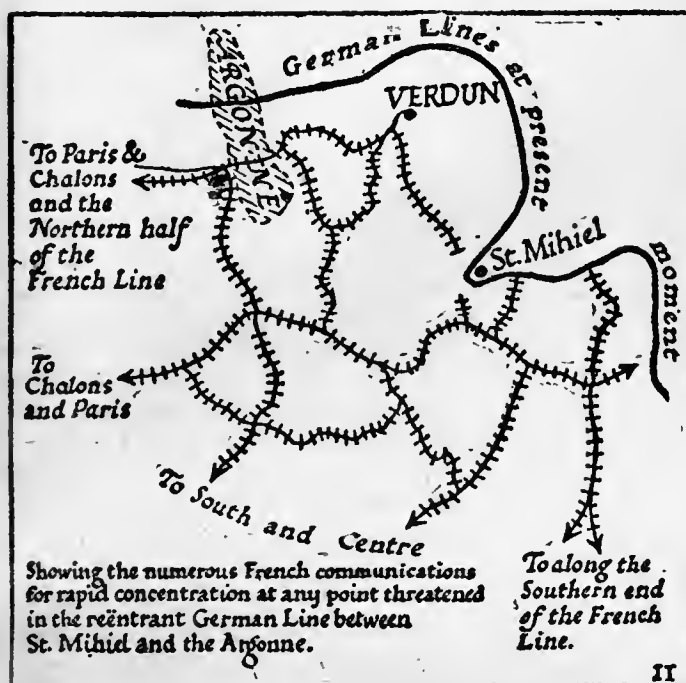


he threaten to achieve such a success, put the French commanders in the dilemma whether to allow a large force to be invested upon the frontier, and so hold up further offensive there, or to retire while there was yet time, and in so doing to give the whole of Lorraine and most of the Barrois to the enemy, to abandon the heavy artillery in position and to jeopardise the whole line to the south.

One may repeat that, merely as a problem upon the map, the most obvious move for the new German attack would be down east of the Argonne on to the main railway supplying Verdun, and

thence downwards towards the western bank of the Meuse opposite St. Mihiel. The counter argument to this is only what may be seen almost anywhere on the line, the facility for rapid concentration upon the French side. But this facility is rather more extended at this particular point than anywhere else. It is, as a sketch printed last week and here reproduced shows, a close system of railway, double and single, of Verdun railway system, normal gauge and light, and can be fed at once from all the depots that lie towards Paris, from all that are drawn up between the frontier and the centre, and from all that are reserved further south. There is, perhaps, no point between the Swiss mountains and the sea where a larger number of the French reserve in men and material could be more rapidly put into the field than the arc now protected by Verdun.

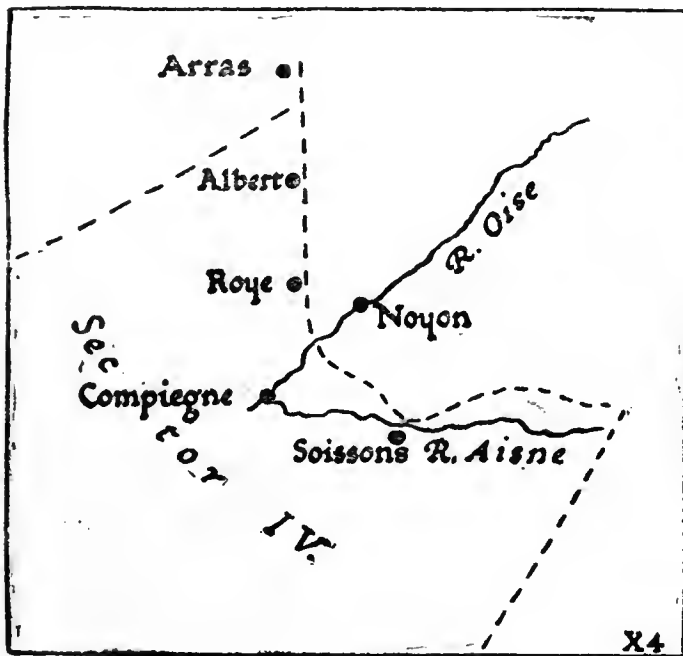
3. Sector of Champagne. Three elements combine to make the new offensive attempt to break through in the sector of Champagne—that is, the open country from Reims to the Argonne. The first is that this sector is the centre of the line so that existing troops could be concentrated more rapidly upon it than elsewhere. The second is one of those political reasons which have already had so much effect upon the conduct of the campaign from the German side: the reoccupation of Reims would be a success to put heart into the further German offensive. The third reason is the nature of the country; how far the advantages here are counter-balanced by the defensive character of modern French work, only those who have had experience of the latter during this campaign can say. But



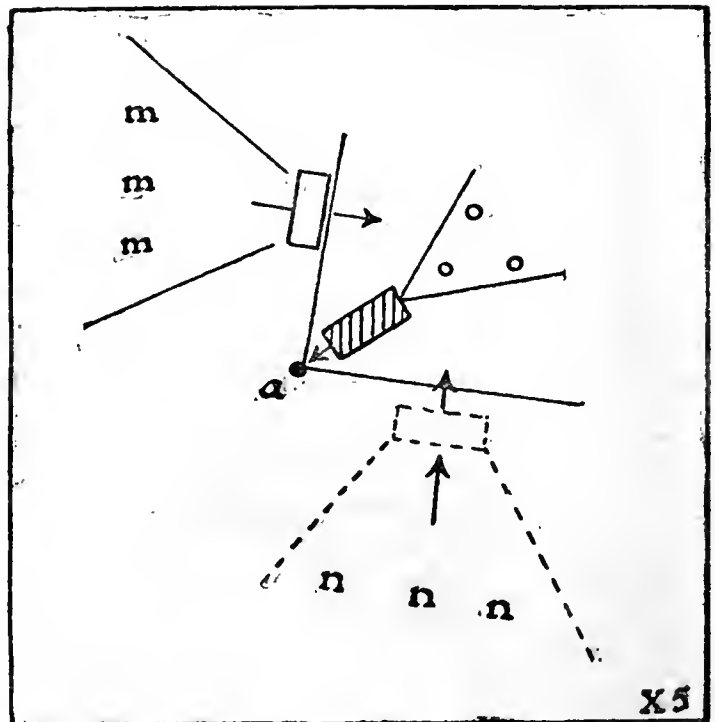
the sweep of country from the Argonne to Berry-au-bac is much the most open in the whole line, and the soil is one which, though very sodden and difficult immediately after rain, is fairly quick to dry. It is the soil in which the Prussian regiments found it impossible to move forward at Valmy, but had they attacked three days later they would have carried the hill, for even half a week of dry wind gives you fair going. In the Champagne Pouilleuse the earth is a mixture of chalk and light clay, the obstacles in all this sector are quite insignificant, there are no woods save a few regular stunted plantations, and the streams are little white sluggish things, such as the Suippes, which not even stop vehicles in all their upper courses.

The drawback to making an attack in force in the Champagne Pouilleuse is that it has to be conducted in a country where every movement is observable for miles, that were it successful it would find immediately in front of it one of the best defensive positions in the whole of France known as the "Cliffs of Champagne" and consisting in steep hillside running north and south from the neighbourhood of Reims right down to beyond the level of Chalons and to nearly opposite Vitry.

4. The fourth sector, the "elbow" where the great line of trenches comes nearest to Paris (you can motor out from Paris to the trenches, spend an hour upon your message there and be back in Paris all between breakfast and lunch) looks the most tempting opportunity of all, but that appearance is little more than a suggestion caused by the shape of the line. If the attempt be made



here it will be made only because the lure of Paris will prove politically too strong for purely military plans. The point of a salient like this is not the best point for attacking a line as a whole; if while you are attacking inside the angle and trying to break it at its point (a) your enemy with an equal force strikes it on either side as at (b) or (c) he will imperil you far more than you are imperilling him, he will be quite certain if he is successful to cut the avenues by which you live, for those avenues are necessarily confined to the narrow area of the angle. You do not, even if you break through, threaten his communications, which, especially under the particular circumstances of the case in question, are at large. He can be fed, ammunitioned, from anywhere along the open



country behind him, M-M-M and N-N-N. You are dependent on O-O-O. It is almost true to say the first appearance of a great force upon the side of such a salient is sufficient to prevent the commander of an equal enemy force from proceeding to attempt an issue through the point of the salient. What is much more likely, if the enemy proposes to use his new armies in this sector at all, is that he would move to attack one side of the angle, as Soissons to the east of it or Roye to the north of it. But even so he would be acting under difficulties and a corresponding force striking at the side opposite to him would, if it were successful, destroy him. The only advantage that he would have would be that working inside the angle he could more quickly decide which side to attack than his enemy could concentrate for the counter attack upon his flank.

Take it all in all the use of the new German armies in the "elbow" of the line would be the use of them in the worst possible place of all the five sectors. If the gap made were narrow it would be useless or rather disastrous, and to make it broad against the convergence of the defence on either side is hardly possible.

5. The last sector, the sixty miles or so from the Arras region to the sea, would of course, if it were the object of attack, reproduce the conditions of all the earlier fighting. These conditions would be reproduced with the advantage to the enemy of his new formations and increased numbers. He would have the same objectives the French side of the Straits of Dover and the possible turning of the French line by the North. He would guarantee himself from any future danger of being attacked along his own right flank from the Belgian coast and in general success here would rank only second in its military effect to success in the sector of Verdun, while the political effect, for what that is worth, would be much greater. Further, it would be a local success won after months of effort over ground the names of which are the household words of every party to this campaign in the west, the enemy would hold Arras itself, Bethune, Boulogne and Calais, Hazebrouck, St. Omer, Ypres and Nieuport. That is only a moral point, but it is worth counting. More than one critical authority has gone so far as to say that the new offensive will certainly be delivered against this fifth sector. That seems to me a great deal too strong. Nothing is

certain in war. As a mere mathematical problem Verdun is easier of solution and more fruitful of result than Flanders; further, the fifth sector is the last to dry with the approach of better weather, and lastly, it has been more exhaustively studied for purposes of defence than any other. But that the chances of the new offensive being directed against this familiar ground are high no one will deny.

It need hardly be pointed out that when the new German offensive is made (as we presume it will be made) it must succeed or result in a situation which will put within sight the termination of the war.

Germany will be using the last of her reserves. She will without a doubt, if she attacks at all, attack to win finally and with her whole force and at any expense whatsoever. It will not be an effort after which the offensive, if it fails, will be able to fall back upon another prolonged defensive. For falling back thus upon a prolonged defensive means the awaiting of further reinforcement and the opportunity for recuperating strength. But after this next effort no such reinforcement can be expected upon the enemy's side; the throw will be a final one.

This does not mean that the struggle will be

short. It may be prolonged, as the fighting for Warsaw was prolonged; or the tremendous (and happily unsuccessful) effort to obtain the Straits of Dover. The effort may be postponed until the spring or even the late spring. It may come upon us before the end of February. When it is at last in movement it may occupy two months or more before it shall either achieve success or confess to defeat. But it is coming; and when it comes it will come upon one of these five sectors and more probably upon the second or the fifth than upon the first, third or fourth.

A NOTE ON THE EGYPTIAN ADVANCE.

Though the advance against Egypt has not yet developed, it is worth remembering by what road the enemy appears to depend for his main supply, and it is a point I will develop at length next week with a sketch map.

That route would seem to be *neither* the sea road *nor* the Akaba road, but rather up the Wady-el-Arish Southward—where there is no serious obstacle to a light railway and no fear of attack from the sea—then, from where the Wady strikes the Pilgrim road, to Suez.

FINANCIAL PRESSURE AND WAR.

THERE has been a good deal of talk in the last few days of the financial pressure upon Germany and upon Austria-Hungary which results from the present campaign. The point merits attention in these notes, for, though it is not strictly military, it is a subject with which every student of military history is acquainted from the past.

The particular error most common in connection with this subject is the error that an enemy can be reduced by the lack of what is vaguely called "money"; a term used confusedly in such statements to mean (a) the total amount of *current metallic medium* possessed by the enemy; (b) this *plus* the *instruments of credit* based upon the metal; or (c) (much more uncertain) a general estimate of all economic values real or imaginary, in services or in goods at the service of the enemy.

Generally speaking, when public men discuss the matter, they mean by "money" either (a) or (b) or both muddled together, and a calculation is made that because the stock of gold in the enemy's possession is dwindling at such and such a rate, or because the instruments of credit based upon that stock are exchanging abroad for less than their face value, *therefore* within such and such a space of time the enemy, though still possessed of arms, food, and men, will be unable to continue fighting.

That the error is a gross one all military history proves; revolutionary France (for instance) was bankrupt, and her instruments of credit exchanging at a negligible fraction of their face value at the very moment when she was about to enter on her stupendous career of victory, and to change the face of the world.

It is an error, I say, to believe that an enemy can be beaten from lack of this "money"—*save possibly through some disturbance in the arrival of necessary and foreign supplies*—and it is an error proceeding, like most economic fallacies, from the extension of private and particular to public and

general experience. Your individual or your group of individuals not possessed of sovereign power cannot get food or arms without the possession and use of the current medium or the instruments of credit based upon the current medium. But the sovereign power can perfectly well obtain both without the use of such a medium. Take all the gold away from the enemy and, if it were possible, deprive him of the power of issuing instruments of credit, you would yet leave the enemy as well able to fight as ever. The only case in which the possession of the current medium (which in our civilisation is gold) and of instruments of credit based upon that medium is apparently necessary to a nation fighting for its life is the case of foreign exchanges. And even here the necessity is not absolute. To appreciate this truth let us see what the current medium does and what instruments of credit based on it do.

The current medium does not produce wealth—guns, wheat, cotton for powder, copper for shells, for instance—it does not even, in the largest view, create a demand for them: all it does is to make their *exchange* easier.

In normal times, and under the régime of private property, one citizen produces, or controls a stock of, wheat; another of guns; another of copper; another of cotton, etc. The man who wants copper may have wheat to give for it, but the man with the copper may not want the wheat. He may want the guns; and the man with guns may not want either copper or wheat—he may want cotton—and so forth. As only in rare cases do two individual citizens possess each a surplus of what his particular known to him neighbour requires, some common denominator arises which all will take as a common standard of value. It reaches that position through a number of characters: permanence, desirability, ease of carriage, etc., and in our civilisation that place has been taken by *gold*.

If the number of transactions in a community increases much more rapidly than its stock of gold there would be a difficulty in effecting them (incidentally prices would fluctuate wildly and tend to fall in the most disturbing fashion) were not more and more of the work done, as production and consequent exchanges expand in volume by *instruments of credit*, that is, by *promises to pay*, to which "credit" or the belief that they certainly will be redeemed when presented generally attaches. By this contrivance one ounce of gold does the work in exchange of ten or a hundred or a thousand; for to one instrument of credit presented for payment in a given time there are always many in circulation.

So far, so good. In normal times if you withdraw gold from the public or make individuals fear that instruments of credit will not be met there is a sudden break put on all exchange and therefore on all production.

But if the Government—the sovereign power—steps in to *compel* production and to direct its goods to the consumer, or by an artificial currency, successfully imposed, supplies the place of true currency, there may be inconvenience, but need certainly be no famine in anything the nation can make.

For instance, take all the gold away from a country and the man who makes hats can still exchange those hats with the man who makes boots, and the man who makes boots exchange those boots with the man who grows wheat, and the man who grows wheat exchange that wheat for hats with the man who makes hats, and so forth, there passing in each transaction neither metal nor the promise to pay metal but any symbol such as a bit of paper on which is printed the name of a familiar coin. If this enforced currency be increased beyond the sum which would have been used in actual gold, supposing gold had been present, prices rise, and an attempt to regulate currency of this sort, based as it is upon a guess as to what would have taken place if gold had been present (a guess that can never be accurate), always leads sooner or later to a vast disturbance in prices and an according suffering and strain in the commonwealth, but still this strain does not kill a nation, it does not prevent the producer from producing or ultimately two producers from exchanging.

If the citizens come to doubt the value of the paper altogether, that is if a man taking a £1 note suspects that nobody will take it back from him, it is of course exceedingly difficult to force the fictitious currency, and in the old days one of the greatest difficulties a Government had in getting such fictitious currency to work was the coercing of its subjects into taking that currency; but we have changed all that. The police to-day are everywhere. A modern government is the absolute master of its subjects; not only from its vastly increased organisation but from the nature of modern lethal weapons, and we may be quite certain that the modern government, particularly such a government as that of Germany, can force a fictitious currency upon its subjects for a very long period.

But even if it had not this power, even if the fictitious currency breaks down, there still remains in the last resource the power of the government to organise national industry under its own inspection and to have the stocks of raw material registered and taken over by its officials, the workmen set to work upon them, and the finished products delivered where their consumption is necessary.

The presence of a current medium, even fictitious, let alone genuine, is not necessary to the continuance of a war or the national life as a whole within the boundaries of the nation, but it is necessary for its foreign transactions unless the government of the other countries whose citizens are trading across the frontier will consent to be at the pains of organising international exchange, and that no neutral country at peace will be at the expense and trouble of doing to oblige a customer who happens to be at war.

We may sum up, then, and say that Germany will never from failure of gold be exhausted in her material power to make war with goods produced within her own boundaries. But may she not be exhausted if gold or its equivalent fails her in her power to make war with materials that have to be imported from outside?

To see how far that is likely, let us see how the citizens of a sovereign power trade with foreigners.

Take a concrete case. Let us say that there are in Lombardy (as there are for a fact) large stocks of india-rubber; the German armies are in bad need of india-rubber. The German manufacturers export to Italy electrical instruments made in Germany. In time of peace the normal process of commercial exchange is this: the German manufacturer sells to an Italian importer a number of electrical instruments for the sum of say 1,000 ounces of gold (the said 1,000 ounces being called by different names in the different European countries, but the ultimate medium of exchange being gold measured by weight). The Italian merchant does not send the 1,000 ounces of gold in a bag to the German manufacturer, but sends him a piece of paper on which he writes a promise to pay to the German 1,000 ounces of gold; and this piece of paper he sends (or in the origins of the system sent) to the German manufacturer who supplied it. A firm making motor-cars for the German armies purchases india-rubber from an Italian manufacturer, and sends *him* a piece of paper promising to pay 1,000 ounces of gold. The sum total of these transactions, so far as international commerce is concerned, is that Germany has lost a certain amount of electrical instruments, and has gained an equivalent amount of rubber; while there lies in Germany a paper promise to pay so much gold, and in Italy a paper promise to pay the same amount of gold. Those who deal with bills and other instruments of credit compare the two situations; they find that the sums cancel out and no gold passes.

The real process is of course a million times more complicated than that. The foreign exchanges ramify through all commercial countries, and concern not two foreign merchants, but thousands upon thousands who are continually exchanging and re-exchanging. The acceptors of bills do not work for nothing, and their profits further complicate the affair, while, of course, the deals that cancel out one against the other are not deals known to a small circle, but moving as currency does, at large over the whole surface of commercial life with its millions of individual purchases and sales; but the principle is that which appears in this purposely simple example, and it will be apparent from that example that although no Italian actually gets German gold in that particular set of transactions, and no German actually gets Italian gold, *yet business would not have been done unless the Italian merchant had believed that the German could pay him gold when the time came.*

Now, suppose the Italian begins to doubt the German's ability to redeem his promise. It is obvious the German Government cannot step in directly. It cannot coerce the Italian, or force its currency upon him; or, still less, make him manufacture the rubber and send it to the German army motor-car man.

At the very beginning of the strain, from the moment that foreign neutral merchants were doubtful whether they would really get paid in full, the exchange would begin to go against Germany badly, she would have to promise on paper to pay 11 ounces of gold to get foreign materials for which she would only pay 10 ounces of the actual metal, and as the prices went on she would have to promise to pay not only 11 but 12, and then 12 to 13, and so forth.

It is obvious that as the strain increases matters may become very bad indeed, and foreign imports at last hardly obtainable. The only way out would be for the foreign Government, acting as a friend, to guarantee Germany's ultimately paying. But even if a neutral were to go so far, it would only affect the narrow circle of exchanges taking place entirely between Germany and that one country.

There are required for a modern nation prosecuting a war which covers all its energies, and is a fight for life, the following main staples—

1. Food.
2. Textiles for clothing.
3. Wood and other building materials for shelter.
4. Fuel for warmth and mechanical actions of all kind dependent upon heat.
5. Armament.

These five categories cover the whole field. The nation can continue to exist and continue to fight indefinitely if it has just enough food, just enough clothing, just enough fuel and just enough shelter, and in proportion to its numerous supplies a corresponding and at least not inferior supply of weapons and projectiles and explosives.

1. As to food. The Germanic allies have enough food—not enough food to be comfortable—for a full year. They will not have enough food in the second year of the war if certain portions of their territory are occupied before next harvest—notably East Prussia and the Hungarian plains; but it is nourishing an illusion to confuse the great discomfort to which the enemy will be put by having to husband and to ration his food with true famine or the actual absence of such food.

2. Textiles. The materials of clothing are necessary in great quantities to a modern European nation; we cannot live in our climates without them; but the German stocks will last a very long time. One can conceive that a modern nation which has been a large manufacturer of textiles in time of peace would proceed for certainly two years even if it imported no raw material during that time. But as a fact the Allies have allowed Germany to obtain all the cotton and all the wool she wanted. She cannot produce all the wool that she needs, and by no means can she produce the cotton she needs, for cotton is a sub-tropical product, but if an unsatisfactory exchange at last so impaired her in these imports that they ceased altogether (a most unlikely event) she would still have domestic stocks suffi-

cient to continue her resistance and her armed struggle for a long time.

3. Wood and materials for shelter: In all these Germany and Austria-Hungary are abundantly supplied, not for one year or two but for ever.

4. Fuel. In all fuel except petrol the Germanic allies are abundantly supplied not for one year or two but for a generation or more. It is true that the main coal supplies lie near the frontiers and are subject to the first effects of invasion, but as matters now stand there is no limit to the enemy's supply in this regard, and mineral oil is not a necessary fuel save as it is burned in the internal combustion engines; in other words coal will do all that Germany and Austria-Hungary want in the way of fuel whether for their machines or their warming, and the absence of petrol strikes only at our next category, armament.

5. Armament. It is only in this category of armament that we find the enemy seriously embarrassed and a decreasing power to pay for imports in gold affecting him. With a blockade imperfect, the financial position of the enemy, though it cannot ultimately reduce him in his domestic energies, may embarrass him if his stock of gold falls, or if his instruments of credit are inflated; and the importation of foreign goods which are necessary for the prosecution of the war may be gravely impeded.

The armament of a modern nation needs the following materials—iron and coal: coal for working up the iron and for producing steel. Without iron and coal it would be crippled at once. Iron and coal the enemy possesses in superabundance. Next, modern armament needs explosives, and our explosives consisting of various substances chemically treated, the main propellant explosive is cotton chemically treated. But, as we saw last week, cotton can at a pinch be replaced by wood pulp. It would be a change expensive in time and in energy; that expense might be fatal in the midst of a great war, but still, theoretically it is possible. Therefore, in the matter of propellant explosives, the enemy can, though hampered by increasingly bad credit, supply himself. Explosives of disruption, such as you have in a torpedo or a shell, are composed of materials which, if I am not mistaken, the enemy possesses in abundance.

We may take it that no difficulty in foreign exchange, no financial trouble can prevent the enemy from making all the guns he wants and all the shell and all the bullets. We may take it that at the expense of some strain (which might at the critical moment of change be fatal) he will get all the explosives he needs, but there are certain necessities in which he is not thus provided; chief among them are horses and petrol. The allies opposed to Germany have been obliged to buy horses from over sea in very large numbers. The Germanic powers are not in that position; they would, if they could, buy horses in similar large numbers, but the avenues of entry are closed to them. Even if there were no blockade, financial difficulty would here hit hard an important source of supply.

Petrol the enemy had in equally sufficient amount so long as he imported freely from Roumania and so long as he had at his disposal all the Galician oil wells. The first of these supplies we believe to be stopped, though we are not certain on what date import ceased. The second fluctuates; his supply is now gravely insufficient, and even if no blockade existed the financial strain would

handicap him in his purchase of this material from abroad.

Lastly, there is a category of things necessary to war, which he either possesses only in small quantities or does not possess at all. We have already seen in these notes how he stands in the matter of copper. He is, perhaps, just beginning to feel the strain here. If the war be prolonged he must feel it, and even in the absence of a blockade, an insecure financial position would hamper him in his purchase from abroad of a necessary factor in armament. He needs, also, antimony (which he does not possess at all) for the hardening of lead, and he needs indiarubber acutely. It is in this last item that insecure finance would, perhaps, hit him worse if the war were prolonged to a second year. Even in the absence of a blockade, an unfavourable exchange would gravely affect his power of purchase over an article which is tropical in origin, and nowhere obtainable within his frontiers.

Quite apart from the blockade by sea and with reference only to their financial position the Germanic Allies, as their position becomes unstable through the strain upon gold, this latter will not handicap the enemy in any of those things vital to the prosecu-

tion of war save horses, petrol, rubber and certain metals, of which the chief is copper. All these materials, some of which must be purchased in large amounts, and notably horses, rubber and petrol, would be gravely endangered by a really unsound financial position of this kind. Petrol and rubber, which are necessities for modern war, would be the most affected.

But if we look on the situation as a whole it is not true that blunders or unavoidable trouble in mere financial arrangement will compel the enemy to peace within a suitable period, certainly not within one year, probably not even two.

At Devonshire Park, Eastbourne, on February 8, at 3.30, Mr. Hilaire Belloc will give an illustrated lecture entitled "The Progress of the War."

Mr. Hilaire Belloc will lecture at Guildford on Saturday afternoon, February 6, and at Queen's Hall on the afternoon of Tuesday, February 9, on "Material and Matters." His next evening lecture, on "The Progress of the War," is on February 17.

Mr. Fred T. Jane will lecture at Queen's Hall on Friday evening, February 26.

Owing to great pressure on our space Mr. Belloc is unable to deal with "Correspondence" this week.

THE WAR BY WATER.

By FRED T. JANE.

NOTE.—This Article has been submitted to the Press Bureau, which does not object to the publication as censored, and takes no responsibility for the correctness of the statements.

THE NORTH SEA.

The North Sea Action.

ADAMIRAL BEATTY'S further report puts a somewhat different complexion on the North Sea fight. It was apparently not the two-to-one affair that it appeared on paper to have been, but a more or less equal fight which, had Hipper's tactics been good enough, could comparatively easily have been a German victory—a victory mainly averted by the fact that Admiral Beatty was the superior tactician.

Reports are still not full enough for complete comment, but certain main facts emerge very clearly indeed; and no further information that we may ever glean is likely to affect these main facts one iota.

Now, marshalling these facts in chronological order, the first is that the German battle cruiser squadron was accompanied by light vessels. Since it certainly did not take these lesser vessels with it for the pleasure of their society, it follows that they were taken for some definite object.

For the bombardment of an undefended British seaport, a light cruiser would be as efficient as a battle cruiser, and a good deal more economical. In this connection, by the way, it is important to remember that for many a year all German naval policy has been along the lines of getting a pennyworth of value for every penny expended. It is true that in the Trade War the reverse of this obtained; but the blame for that lies with unexpected British naval activity, not with errors of judgment on the German side. Similarly, the first East Coast raid was a wonderful waste of money without result—but they did not so regard it. To them it represented "We risk x . We stand to gain $x + y$. Under the head of "frightfulness" y will be a valuable asset to us. Therefore it is worth risking a few light cruisers to obtain y ."

In the second and destructive raid, y having been presumably easily secured before, they thought that x might also be incorporated, and they obtained such x as having killed and wounded a number of non-combatants may represent.

To us this does not seem a military asset, but the German mind is attuned differently to the British mind, and in a matter of this sort it is only the German mind that counts.

Now, of the "baby-killer" raid we know two things. Of these it is fairly well established that it was a battle cruiser expedition pure and simple, carried out, apparently, without auxiliaries.

On the third egress the German battle cruisers were accompanied by a full complement of destroyers and such other auxiliaries as would be required for a battle. From this the inference is that a battle was expected—to take destroyers out for what Mr. Churchill calls a "baby-killing" expedition would be a waste of money along the lines of the economical German mind.

I suggested last week that a possible German objective was to get battle cruisers out on the trade routes, but I have no desire to labour the point. I will merely say that if that were their objective they had arranged for it in the smartest possible way.

We now come to the preliminaries of the action. Here, again, the Germans exhibited a very high technical ability to grasp things. When our light squadron found them and did not at once turn and run, the German admiral immediately deduced that a British force superior to his own was somewhere in the vicinity.

I am somewhat inclined to fancy that the really correct thing for our light squadron to have done might have been to do a "cut and run." Perhaps they did. Equally, perhaps, that gave the show away. You never know. In chess, a knight that retreats is often more dangerous than one that advances, and in naval warfare you cannot sit down for an hour and think things out like you can in chess. The only possible thing to do is to act on the instant and along the main idea.

The action, whatever it was, of our light squadron is, therefore, a matter of minor significance; whatever they did was bound to be right or bound to be wrong, according to the enemy's reply.

The enemy's reply was absolutely correct. It was to turn about and run for it, taking no chances. So swiftly and well was this accomplished by the Germans that only our two fastest battle cruisers, the *Lion* and *Tiger*, had any actual important part in the battle, other than the finishing off the rearmost and slowest German.

The guns per broadside really engaged were as follows:

BRITISH.		GERMAN.	
Lion	8 13.5in.	Derfflinger	8 12in.
Tiger	8 13.5in.	Seydlitz	10 11in.
		Moltke	10 11in.
		Blücher	8 8in.

Omitting the *Blücher* as hopelessly outranged and a sort of lamb sent to the slaughter, this gives us 16 British big

guns against 28 German guns; of lesser power and calibre, it is true, and four of them likely to be masked on account of the echelon formation of the turrets of the *Seydlitz* and *Moltke*. Let us, then, call it 16 versus 24; and since the 16 were bigger and better guns, we arrive at a "more or less equal." One big hit may do twice the damage of one lesser hit. But if the lesser gun is big enough to do serious damage and can get in twice as many hits, the bigger gun is unlikely to score much off it. I do not say that this was the exact proportion, but I do say that when the *Lion* and *Tiger* forged ahead and engaged, the action was the most equal thing we have ever seen in this war, or are ever likely to see. Thus the second stage of affairs.

The third stage arose when the *Lion* was "damaged." The *Blücher* (which never counted for much) was out of it, and, coming up astern, was another British squadron fully equal in gun power to the German one. Deleting one echeloned turret in each case, the respective broadsides were:—

BRITISH.		GERMAN.	
Princess Royal ...	8 13.5in.	Derfflinger	8 12in.
New Zealand ...	6 12in.	Seydlitz	8 11in.
Indomitable	6 12in.	Moltke	8 11in.

The advantage in favour of the Germans, reckoning the bigger guns, would be four numerically, but their guns being generally inferior, and some of them probably out of action, they would be the weaker squadron. Still, as Hipper had the speed gauge of these three British ships, it certainly looks on such evidence as is available as though he should have been able to slow down, and give the *Tiger* some serious punishment, or else inflict more damage on the *Lion*.

There are four reasons, any of which may explain why Hipper did not attempt to do this. They are:—

- (1) That it did not occur to him.
- (2) That he was too damaged to attempt it.
- (3) That he was obsessed with the idea of drawing the British squadron into a mine or submarine area.
- (4) That he was in a state of what is vulgarly known as "blue funk."

Now, of these four reasons the first is very improbable indeed, because it was so palpably obvious and because the story of the Horatii and Curiatii is as old as the hills.

Against the second reason is the circumstance that the Germans officially deny our statement that two of their battle cruisers were badly damaged. In matters of this sort one does not do well to discriminate too much between the official reports of either side—that is to say, it is rank folly to assume that one side is truthful and the other an unmitigated liar. By far the safest thing is to assume that the other side is "moderately truthful." And this, so far as the North Sea action is concerned, we may find proof of in the fate of the *Blücher*. She was hammered and hammered till she was more or less out of action; but it took a couple of torpedoes from the *Arctura* to send her to the bottom. A vivid illustration of the old motto of the torpedo school: "A gun cannot sink a ship!" On which account I incline to the opinion that we damaged the Germans a good deal less than we think, and also somewhat more than they admit. War is not a matter of "glory headlines" in the halfpenny Press, but of arriving at as near the actual truth as possible. Out of all of which I am inclined to fancy that Hipper could have slowed and closed and done extra damage had he desired to.

The third reason—that of drawing the British into a trap—is, I fancy, the most probable of any. It represents the integral idea of Teutonic notions of naval warfare. I have not seen much of them at naval war game, but such little as I have seen has always been influenced by some such idea, as being considerably superior to any stand-up fight. It is—to a certain extent. But its weak point is that it presupposes a certain amount of stupidity on the other side—a dangerous assumption to act on.

The fourth reason is permissible. It is to be deduced from the wild firing at nothing of the first East Coast raid; from the hurried and wild bombardment of Whitby in the second raid (when British ships were known to be approaching). But I think we should discard it, if only for the reason that it is blank folly to assume that the enemy is inferior in courage or determination to win.

When the war is over and the books are opened, and all is known, I think we shall find that we won and Germany lost the "battle cruiser action of the North Sea" because Hipper was obsessed with the idea of getting something for nothing out of drawing our ships over a submarine or mined area, and because Beatty, as the superior tactician, was able to fathom that idea. In short, it was rather an affair of Beatty versus Hipper, than an affair of a certain number of British ships against a certain number of German ones.

The Submarine Attack on Trade.

On January 31 three British merchant steamers were captured and sunk off the Mersey by the German submarine *U21*. In each of these cases the usual cruiser routine was followed, warning being given to the crew to leave, and their ship then destroyed. This was unpleasant, but it was quite legitimate warfare.

In the Channel, off Havre, on the same day, two more merchant ships were hit and one of them sunk. According to an official statement by the French Ministry of Marine, both of these ships were torpedoed without warning. It chanced that the crew of the sunken ships were saved, as some French torpedo craft happened to be about. But this in no way excuses the act, which was a deliberate attempt to slaughter non-combatants without warning, and so comes under the head of "piracy." It is to be hoped that should the crew of this submarine ever be captured there will be no false sentiment about making them prisoners of war. They should be tried, and, if condemned, hanged as any ordinary pirate would be.

That submarines were in the Channel we have long known, as we have had experience of them before, but that they should have got into the Irish Sea is certainly unexpected news. It throws a marked sidelight on reports which have been current as to mysterious signals and lights which have been seen on the Welsh coast. Signalling thereabouts seemed pointless, and so the stories were not generally believed. Now, however, it certainly looks as though a systematically-arranged campaign was being indulged in; and the lights are probably intended to indicate to German submarines the places where supplies have been smuggled in in the past.

There is only one recorded case of any trace of supplies having been discovered near any spot from which signalling has been reported. That was an empty ten-gallon drum of petrol; but as all the German submarines burn heavy oil, it probably had no connection with the war. It stands to reason that the enemy would not be so indiscreet as to signal from the place where the stores actually were, but adopt some code to indicate that the stores were so many miles away in one direction or another.

A really systematic search of all likely hiding places, including lonely and deserted buildings, outhouses, sandy dells, etc., could be carried out by the civil population along the coasts, who might be enrolled as special constables for that purpose. Or for that matter, Boy Scouts could be employed, as part of their training is the search for hidden objects, and also Boy Scouts have a wonderful trick of nosing out things which do not strike other people.

It was a Boy Scout who some years ago discovered a German who had been serving in the British Army for two years under an English name, and about whom no one had the remotest suspicion as to his nationality.

In any case, one main point is clear. It is absolutely impossible for a German submarine to reach and maintain itself in the Irish Sea for more than about twenty-four hours at the very outside, and when the problem of having to get home again is taken into account this seems an exaggerated proposition. The distance from Heligoland to the Mersey is roughly about 800 miles—perhaps a little more for a submarine compelled to observe secrecy. There and back call it 1,600. The maximum radius of *U21* is 2,000 miles. At the very best, allowing for lying by and everything, that could not possibly give her more than three days in which to operate. Allowing for contingencies, twelve hours would be nearer her actual limit, and even this is a generous calculation.

Economical speed, on which the endurance calculations are made, is, however, a slow speed, and at that a result achieved under the most favourable conditions. One way and another we arrive at the fact that while it is just physically possible for *U21* to get off the Mersey and return home, there are very material possibilities against her remaining off the Mersey for more than an hour or so without aid from outside.

Now all the evidence is to the effect that she must have remained there for considerably longer than the possible period.

We must discard all theories about an intention of remaining to do as much damage as possible, and then surrendering—for one reason that her supply of torpedoes or explosives is necessarily very limited; for another, that such a policy would result in the extinction of all the German submarines without much more loss to the British Mercantile Marine than was achieved single-handed by the *Emden*.

A priori, therefore, there are stores and supplies somewhere—either on the Welsh coast or on the Irish coast, or possibly on both. Maybe, also on the Isle of Man, since

U21 insisted on some of its victims being sent there. Bluff is as frequent in the great game of War as it is in the game of "Poker."

In any case, it seems abundantly evident that either on our own coasts or adjacent thereunto in our own waters, the German submarines must have some bases of supply. The surest defence against them is not to seek for needles in hay, but institute a systematic search for every possible base. Deprived of these, the German submarine corsairs will soon become helpless.

THE BALTIC.

The Russian Navy has not been long in demonstrating that winter is no bar to its activities. On January 25 the small cruiser *Gazelle* was submarined off Rugen, where she was patrolling.

Though only a small vessel, the torpedo failed to sink her, and she was towed into Sassnitz by a ferry steamer.

The *Gazelle* was an old vessel of small size and little fighting value. However, she was well fitted up for the work she was engaged on, so her disablement is useful to the Allies.

The submarine probably came from the Aland Islands, which are quite 500 miles from Rugen. This fact, coupled with the weather conditions, will probably have a considerable moral effect on the Germans, who in the past have had a tendency to regard the Russian submarine service as inefficient.

It is officially announced that on the 25th a Zeppelin dropped nine bombs on Libau, and was then brought down by gunfire.

THE ADRIATIC.

Certain correspondents want to know why the French Fleet is so inactive in the Adriatic. It is suggested that if the Austrian battle fleet will not come out, then the French Fleet should bombard Cattaro.

Now early in the war there was a bombardment of Cattaro, but it produced little effect, and so was discontinued. Had Cattaro fallen, all the other bases could have been captured, but there would have been a twofold danger in the attempt: in the first place from submarines, and in the second place, of being caught with depleted magazines, just as Persano was caught by Tegethoff at Lissa. That little studied naval campaign of fifty years ago probably influences profoundly the present situation.

To attempt a serious bombardment of a strong position, with a "fleet in being" no great distance away—a fleet which, though inferior, is not more inferior than was that of Tegethoff to Persano's at Lissa—is to court a French replica of the Italian disaster in the past.

The policy of the French Navy is dull and unexciting, but the object of war is not to provide headlines and interesting reading for the general public. (It is astonishing how many people there are who fail to realise this. It is due probably to picture palaces and "football.") The French are doing the right thing with their battle fleet, just as our Admiralty is doing the right thing with the British battle fleet.

ANSWERS TO CORRESPONDENTS.

A. C. (Hamilton, N.B.).—(1) In reply to your question, the sea-keeping abilities of British and German submarines of equal date are more or less the same, but with a theoretical balance in our favour, because our boats are generally larger. On the other hand, as the Germans undoubtedly employ mother ships under a neutral flag, and as we consider it beneath our dignity to play a similar trick,

their actual sea-keeping qualities are probably twice that of ours.

(2) As boats *ceteris paribus* our submarines are certainly superior to the German class.

(3) The Germans have undoubtedly displayed very great daring with their submarines, but if you investigate you will find that this daring is mainly confined to four or five boats which have done all the work to date.

(4) As regards the relative merits of big ships, the modern British warship is superior to the German in the matter of offence. In the matter of defence, that is to say, avoiding being hurt, the advantage rests with the German ships. Our theory is to hit the enemy so hard that he cannot do any hitting back. The German theory is to be able to take almost unlimited punishment and trust to luck that the relatively feeble reply hits will eventually achieve victory.

(5) I do not think that the fact of the men appearing on shore with the name of their ship on their caps is likely to give anything away to the enemy. For example, it might be a blind; it might be that they had just been relieved by another crew and had not time to change their cap ribbons, or they might have been suddenly drafted to another ship.

(6) I think that we would be well advised to be careful about accepting stories of German treachery. In the Franco-German War of 1871 *nous sommes trahis* was the undoing of the French troops in many a battle.

A. F. K. (near Bath).—We, all of us, find the Censorship troublesome. Occasionally the Censor's operations have turned a reasoned argument into seeming drivel. On the other hand, it has to be remembered that the Censor works on inside knowledge, and is seldom, if ever, in a position to explain his reason for suppressing certain information. As you are an Oxford man, may I refer you to the history of the Peloponnesian War, and request you to ask yourself whether the Athenians would not have fared better if the democracy had been kept less informed about the course of naval operations. It is possible, of course, to cite one case in which the pressure of non-technical public opinion did lead to an advantage, but against this I think there are many in which the reverse obtained.

A. E. J. (Redhill).—Comment on the matter to which you refer is not permitted by the Press Censorship.

F. E. B. (Broadstone).—There are plenty of small craft patrolling looking for submarines, but a submarine is a difficult fish to catch.

E. (Uckfield).—(1) It is the fortunes of war that the small craft which have to do the spade work rarely get into the limelight. Occasionally, as in the case of the *Arctusa*, they do, but, generally speaking, it is necessarily the big ship which is equivalent to the star actor.

(2) As regards the official reports of the Falkland Islands, there is probably some good reason for this being withheld.

(3) The third matter to which you refer is better not discussed in print further than I have already done.

A. P. O. W. (Highgate).—Your idea is quite sound, but so far as I know, it is already in application. You will understand that to discuss it is not to the public interest. It is extremely important in this war to kill the enemy without letting the enemy know how and why he has been killed.

H. S. J. (Saundersfoot).—I commented on the matter to which you refer several weeks ago, but it was deleted by the Censor. If it is now allowed to be published, you will see my views on the matter as then written. If you do not see them, you will understand that the fiat of the Censor is still against publication.

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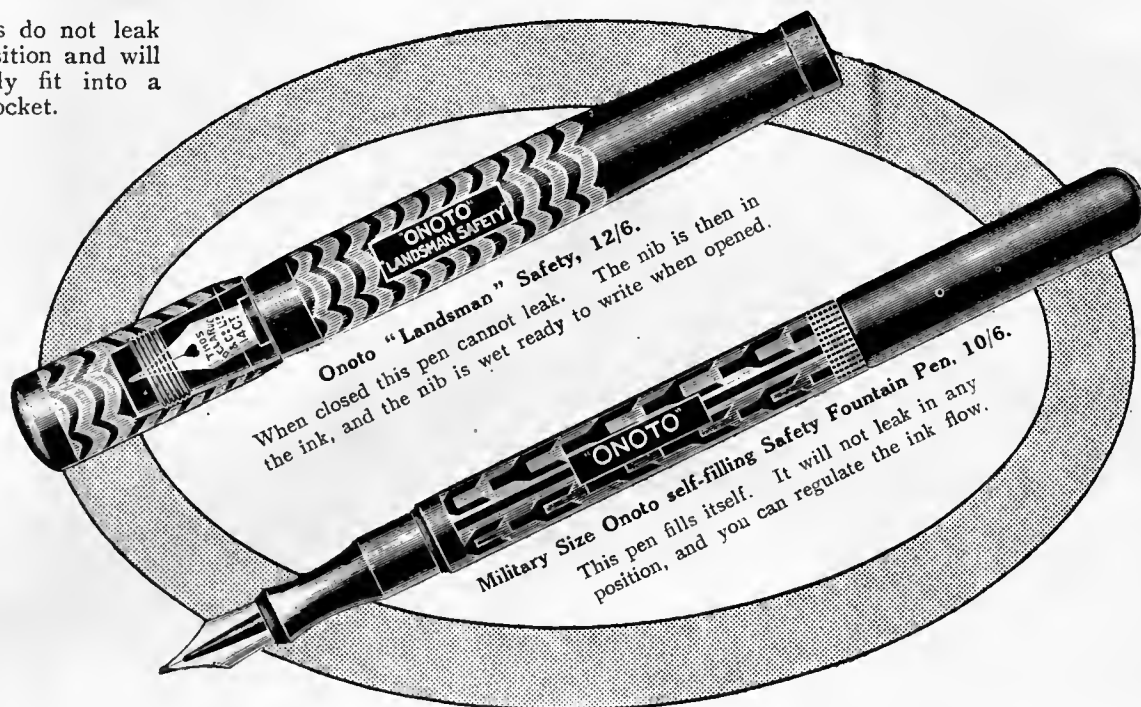
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LAND & WATER

Vol. LXIV

No. 2753

SATURDAY, FEBRUARY 13, 1915

[PUBLISHED AS]
[A NEWSPAPER.]

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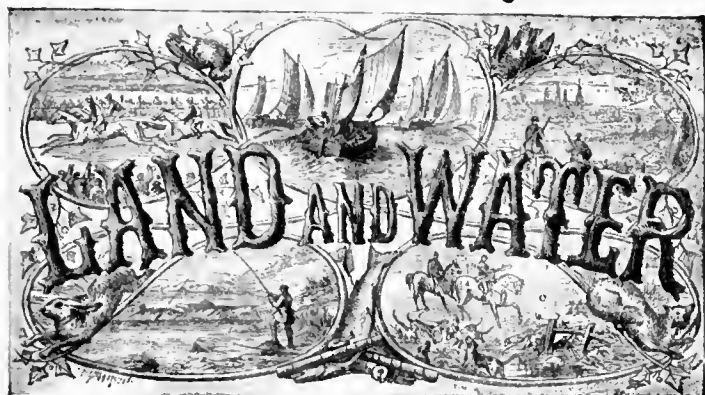
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War Lectures

"But all mankind's concern is charity."

A NOVEL and interesting scheme has been inaugurated by the Committee of Queen Alexandra's Field Force Fund. It has been arranged through the medium of LAND AND WATER that clergymen, Members of Parliament, schoolmasters, members of local committees, and other public speakers, shall have the privilege of giving as lectures in aid of this fund the valuable articles which have appeared in this paper since the commencement of the war on the operations of the war by Mr. Hilaire Belloc—whose masterly criticisms of the "War by Land" have been so favourably noticed in high military circles—by Mr. Fred. T. Jane, the great naval expert on "War by Water," and the interesting and practical suggestions on "Tactics and Strategy" by Colonel F. N. Maude, C.B., together with questions dealing with aeronautics from the able pen of Mr. L. Blin Desbleds.

These lectures will be illustrated by lantern slides of the maps, plans, and diagrams which have appeared in the articles from week to week. There will be no charge whatever made for these privileges, but the only condition qualifying the offer is that a charge for admission to the lecture will be made or that a collection be taken and that the proceeds shall be allocated to the Queen Alexandra Field Force Fund. The lectures, lantern slides, and the advertising matter will be supplied free of charge.

By this means those who are unable to serve the empire in the firing line are given a great opportunity to help our gallant troops at the front, whose needs are increasing daily. There is little doubt that such a series of lectures will be an instantaneous success, as the articles from the pens of the above-mentioned writers have been acclaimed by the Press as the finest contributions to the literature of the war. The subject matter of the lectures is dealt with in such a lucid and fascinating manner that, whether in town or

hamlet, they are bound to attract large and enthusiastic audiences.

In every parish in the United Kingdom there is some one sufficiently gifted to undertake these duties, and in the country districts there should be no difficulty in obtaining the use either of the village hall or schools for suitable accommodation where the lectures may be held, and it will be found that there are many who will gladly give their services and do the necessary organising that will ensure local success.

Such lectures would, apart from helping the object for which they are instituted, be of great educational value, and they should be given at regular intervals—weekly or fortnightly—as the war proceeds. The profits thus accruing will ensure for the troops a regular supply of those small necessities and comforts which the soldier so greatly appreciates.

A few words with regard to the Queen Alexandra Field Force Fund will not be inappropriate here.

This fund, which is operating with the express sanction of the War Office, has for its objects the provision of comforts for our soldiers on active service, the purchase of these comforts on specially advantageous terms, and their equitable distribution wherever they are required. The committee are in constant touch with the commanding officers at the front, who notify the needs of the men under their charge, so that the articles supplied are exactly what are wanted, and waste and overlapping are obviated. The requirements of the men already at the front are considerable, but much heavier demands are bound to be made in the near future, when our Expeditionary Force is augmented by the new armies which are now almost ready to take their places in the field.

As can be gathered from the title, the fund is under the patronage of Her Majesty Queen Alexandra. The president is Lady French, the chairman is the Countess of Bective, and Mr. Ralph Upton is acting as hon. treasurer.

It is hoped that every reader of LAND AND WATER who has the gift of addressing audiences will avail himself of this opportunity of affording help of such a practical kind to the troops, and it is also sincerely hoped our readers will draw the attention of their friends to this unique scheme and magnificent opportunity of rendering a very great service.

Particulars of lectures held, the amounts received, and other details, will be published in LAND AND WATER, and further particulars will be gladly furnished to anyone who cares to make application to Mrs. William Sclater, honorary secretary, Queen Alexandra Field Force Fund, 24a Hill Street, Brompton Road, London, S.W.

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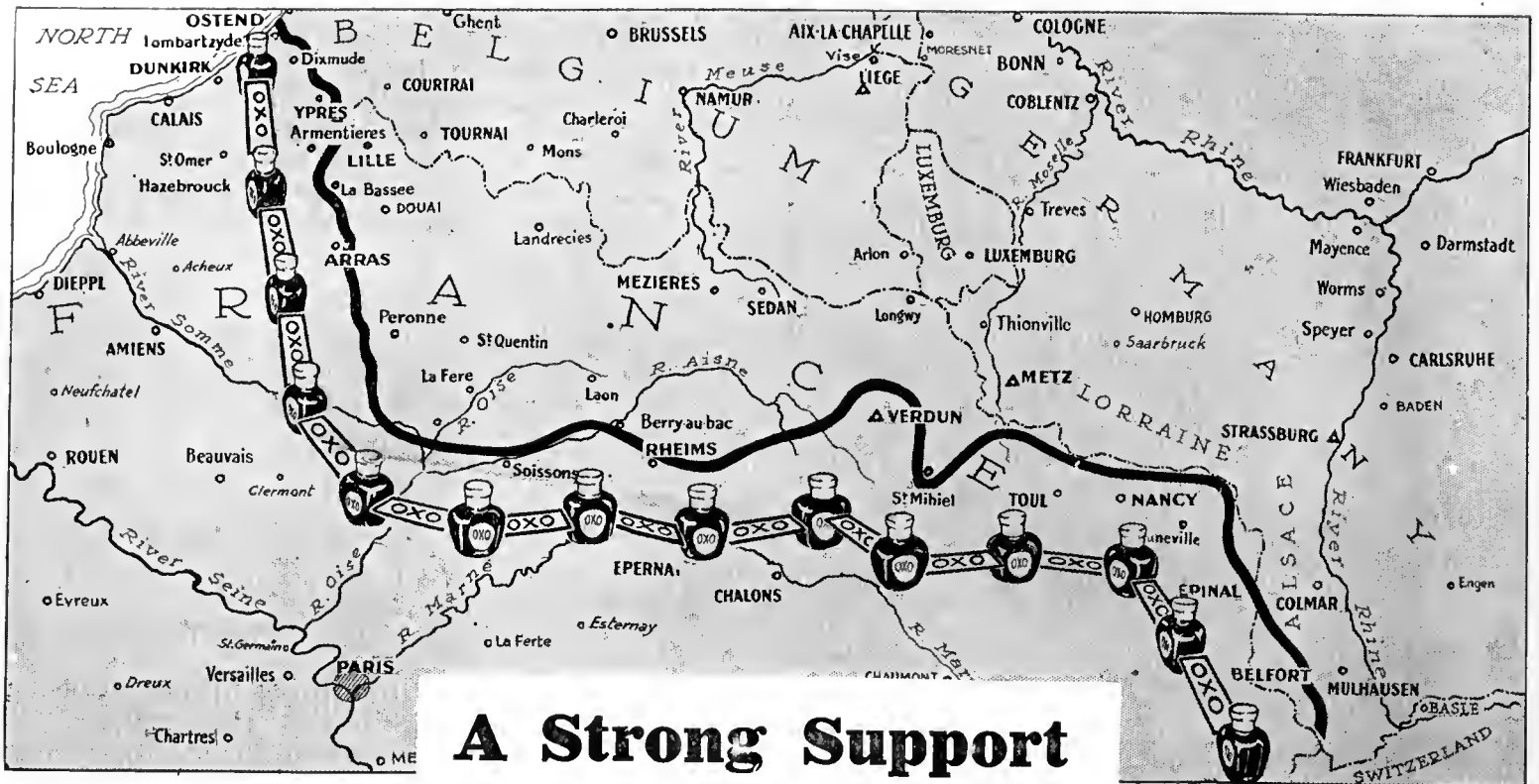
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Reprinted from the "Daily Mail," Jan. 7th, 1915.

Scottish Soldier's cheery letter.

"In one billet our mess kitchen was partly blown away with a shell, and the old thatch made a comfortable shakedown. Seven of us mixed up dinners and messed out of one tin—potatoes from the pit, bully beef, OXO and hard biscuits—which we enjoyed immensely."

From the Glasgow "Daily Record," Jan. 4th, 1915.

Reprinted from "Carlisle Journal," Nov. 13th, 1914.

"Yesterday morning I had 31 patients—slightly sick, sprained ankles, and such like. I discharged 12 of them to duty in the afternoon. At 6.30 I had to stand ready to get in cases brought down in motor ambulances from a hospital nearer the front. I saw them all in, had hot OXO and bread for them, and went up for my dinner, got back about nine o'clock, and then started to dress the cases needing it most."

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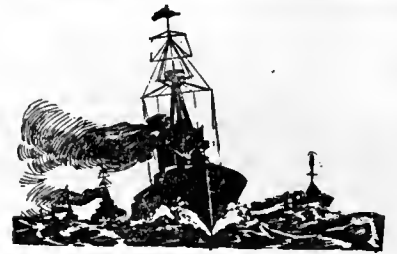
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OXO in the Navy

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From the Commander of H.M.S. "Viking."

The ship's company of H.M.S. "Viking" are most grateful for the gift of OXO sent by "Popular Science Siftings." I need hardly say that OXO is a most suitable gift for the crew of a torpedo boat destroyer in Winter.

From the Captain of H.M.S. "Tiger."

"I should like to express to you the very grateful thanks of my Ship's company for your most acceptable gift of OXO, which you have so kindly sent for their use.

Your present, I can assure you, will be much appreciated."

From one of the men of H.M.S. "Colossus."

"Having had some OXO sent me by my brother, who advised me to write for some more, I now take the opportunity of writing for £1 worth. It is grand for night watches, being taken before we go on, as it takes such a short time to make, and must be taken warm, hence the sustaining power we get."

THE WAR BY LAND.

By HILAIRE BELLOC.

NOTE.—This Article has been submitted to the Press Bureau, which does not object to the publication as censored and takes no responsibility for the correctness of the statements.

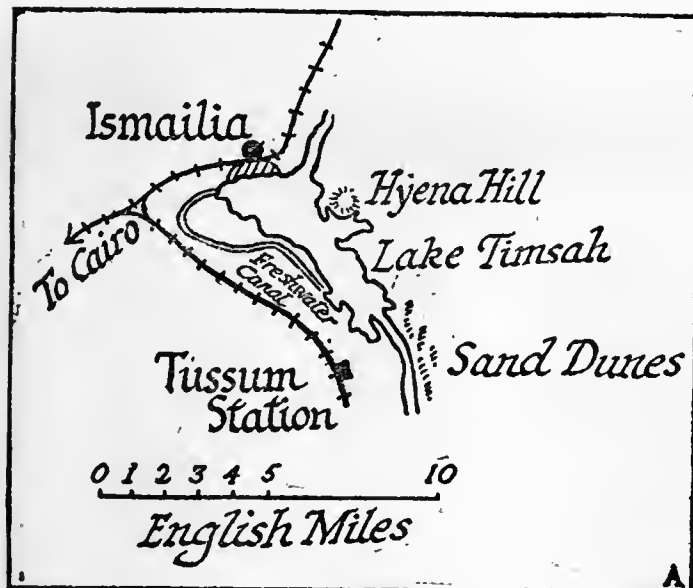
In accordance with the requirements of the Press Bureau, the positions of troops on Plans illustrating this Article must only be regarded as approximate, and no definite strength at any point is indicated.

THE ATTACK ON THE SUEZ CANAL.

THE movements upon either front, even upon the East, have been so slight this week up to the moment of writing (Tuesday evening) that there is little matter to analyse. But such as there have been we discover in the eastern field, and the most important perhaps of the episodes over that very wide area is the attack upon the Suez Canal and the failure thereof on February 2nd.

It seems that the total number of the enemy that reached the region immediately east of the Canal, in what the Turks call a Reconnaissance in Force, was not less than 12,000.

No successful crossing was effected at any point, save by four men, who were captured. The operation of bridging at one point (Toussoum, opposite the Sand Dunes, south of the Ismailia lake or Lake Timsah) was permitted up to a certain point and then attacked. The bridge was destroyed. Much of the bridging material fell



into our hands. The enemy lost a considerable, though not very high, proportion of killed, wounded and prisoners, and has now so far retired that none of his troops (we are officially informed) is to be found within a belt of twenty miles from the eastern bank.

Now, the first point we have to seize in connection with the whole of this expedition against Egypt is the strategical object in view.

What was the motive of the enemy in preparing and conducting this attack? What will he intend when he knows it?

It may, I think, be prudently suggested that his motive is not simply the occupation of Egypt and the driving of the British forces thence; nor his task only the obviously difficult one of surmounting the obstacle of the Canal. He has also a secondary and most important object, which is the rendering of the Canal unsafe in the opinion of shippers for commerce.

The value of this object in the general strate-

gies of the campaign is very high, and supposing that, from geographical circumstances of any kind, the crossing of the obstacle were manifestly impossible, while the molesting of it from the eastern side were easy, then it would still be the business of any wise commander to maintain a series of attacks upon the Canal, although he should have no hope of crossing it. For it is not the occupation of Egypt that counts in itself so far as the mere progress of the campaign is concerned—though it would count, of course, heavily as a prize in the settlement after the war—it is only Egypt as the ground from which the Suez Canal is controlled that is material to the large operations of this campaign: and from the point of view of the enemy the complete control by themselves of that waterway, though valuable, would not be very much more valuable than its increasing interruption.

Germany and Austria and their Turkish Ally are already held by sea. Even if the Turkish invasion should succeed in obtaining control of the Canal that control would have, therefore, little positive value to the Germanic alliance. But the negative value of interfering with commerce through the Canal is exceedingly high.

Much of this country's food, certain of its reinforcements, a great mass of its general trade, is dependent upon that strip of water; and so has come to be all that rapid communication with the vast, foundational, Indian Dependency which, in the last forty-four years, has grown to wholly replace the longer route by the ocean.

There is here a parallel with the maritime strategy of the enemy in home waters.

Thus, the submarine threat cannot, it is evident, actually account for any very large proportion of the tonnage entering and leaving British ports. What is hoped from the submarine threat is that the sense of insecurity may be so nourished by occasional and unexpected disasters as to interrupt the regularity of our supply. It is evident that this feeling of insecurity can be more easily effected in a highly circumscribed area such as this belt of communication between Port Said and Suez than upon the high seas. It is enough that first one point upon the Canal and then another should be rendered difficult of passage fairly frequently, for all regular traffic through the waterway to be interrupted. It is this, I think, which accounts for the experiment—for it was no more—of last week. It is probably this which accounts for the employment of but a portion of the forces the enemy had at his disposal. And it is this which makes it fairly certain that the attempt will be renewed.

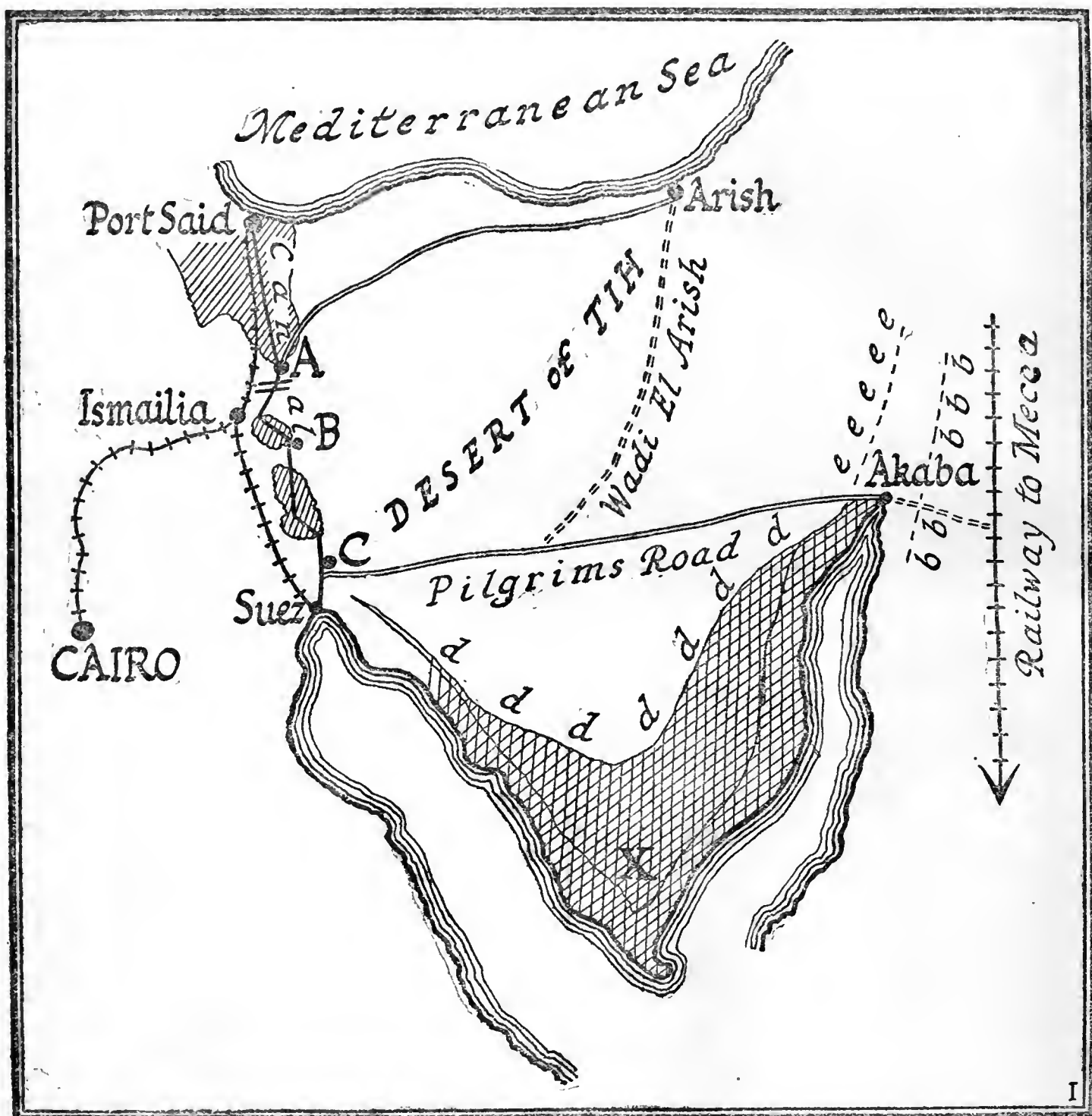
It is evident that the chief instrument for merely molesting the users of the Canal would be heavy artillery. Heavy artillery concealed in the irregular land lying east of the Canal, dependent upon its long range for a certain immunity, and occupied both in threatening the water and perhaps in lessening the depth by ruining portions of the banks, would be a very serious menace. Only,

those who are at once acquainted with the nature of the banks at various points and with the probable effect of heavy shell fire upon them, are competent to say how far this method of attack could proceed. But it is evidently that upon which the enemy would rely if it were open to him.

But that it is open to him we may gravely

of the Canal, without too great irregularity, would have little in common with the regular engineering of a permanent way. It is astonishing across what irregularities of soil the old Decanfile lines (for instance) could be used, and at what pace they could be laid.

There runs from the point of El Arish upon



doubt; for to bring pieces of any size across the desert would probably prove impossible, even with the use of petrol traction and of a light railway to supply the columns. And this phrase "a light railway" leads to the discussion of a point which has been debated elsewhere than in these columns.

Among men acquainted both with the ground and with the Turkish service, there seems to be a debate as to whether the laying of a light railway to aid these operations will, or even could, be undertaken. As one eminent critic put it the other day, "The Turks are no great railway builders." If the task is undertaken, it must be remembered upon the other side that the laying of such narrow-gauge fixed rails and iron sleepers, or cross pieces, as would permit of provision and water reaching a front, say, a day's march east

the sea coast up to the heart of the peninsula an ancient watercourse (now dry save towards its mouth and in exceptional seasons), which takes its name from the place where it reaches the sea—El Arish. This dry watercourse of the Wadi-el-Arish is said, by those who have seen it and travelled upon it, to afford a fair ground for the laying down of a light railway; and at a point about midway between Akaba and Suez (but a little nearer the latter point), the upper reaches—or what were once the upper reaches—of this watercourse touch the Pilgrims' track from Suez through Akaba to Mecca. The rails might then follow the track up to a point, say, ten miles east of Suez.

There would be no need to carry them further, for we know that the enemy is supplied with petrol

vehicles and could distribute water and munitions from such a point. As the land falls rather steeply down on to the level of the sea a little before the Pilgrims' Road reaches Suez, such an arrangement would have the further advantage of avoiding the difficulty of bringing the rails down that slope.

A direct connection with the Mecca Railway past Akaba (or just round the top of its gulf), whereby communication might be established with Palestine, Syria, and the depots in the north, has been rightly pointed out by competent critics to be a task of great difficulty, and probably impossible in the case of such a campaign as this. And that for the following reason. From the Mediterranean Sea to the southern point of the Sinaitic Peninsula the land gradually rises up to the ridge marked on the sketch, d, d, d, d, d, which (if there were any water to speak of in that land) might be called "the watershed." This stretch rising up from the Mediterranean is the desert of El Tih, diversified by several groups of high hills, but distinct from the great limestone peaks in the southern triangle beyond.

These have been compared in their formation to the Alps, and they occupy all the tongue of the Peninsula, shaded upon the sketch-map with cross hatching. It is in the heart of this latter formation that the Jeb-el-Musa, or Hill of Moses, stands, which is traditionally identified by many with Sinai—much where I have marked upon the sketch the letter X. Now, the consequence of this formation is that from and above Akaba there is a deep gorge. The edge, or escarpment, of the Sinaitic plateau runs along the line e, e, e, e, e; and it so happens that immediately upon the other side of Akaba, along the line b, b, b, b, you have another escarpment rising steeply towards the Arabian Desert. So that, to establish a line from the existing railway along the Pilgrims' Road, even if you took it round so far from the sea that it was nowhere in danger by fire from that quarter, you would have to build for the crossing of the Ghor, the profound trench 3,000 feet in depth between the cliffs at b, b, b, b and the opposing cliffs at e, e, e, e. It is exceedingly unlikely, or rather, it is impossible, that the enemy should attempt this; but it is conceivable, though not perhaps probable, that he might attempt the laying of a line of narrow-gauge field railway up the Wadi-el-Arish, as I have suggested.

The attack with which the Egyptian garrison has just dealt struck at two and perhaps three points, marked upon the accompanying sketch, A, B, and perhaps C, of which A is El Kantara, the end of the northern, or sea, road, B the most important Toussoum, just south of the Ismailia lake, and C the slight skirmish reported north of Suez. The shaded portions along the line of the Canal represent areas where water in greater or less width prevents immediate access. The main attack near Ismailia at B had the advantage that it threatened the junction between the lateral railway of the Canal and the railway to Cairo. To attack at the point A had the advantage that the invading troops had marched by the shortest route—the age-long sea-road of all invasions from the Levantine coast to Egypt. The attack near C—if it was in any force, or was correctly reported—would mean that some portions of the enemy had already used the Pilgrims' Road; this point has the advantage that it is the nearest point to Cairo.

But it matters little where the Canal is crossed so long as it is effectively crossed at *any* point; and its molestation is possible, and might be long continued, without its crossing being effected at all.

Prisoners have already given accounts of the roads by which they came (the northern road is so far reported only), but we have not yet sufficient evidence of which of the three possible routes will be, or has been, taken by the main force. It is probable, or certain, that this first attempt was made by three separate bodies coming by various routes, or at least by the southern and the northern routes simultaneously. From the same source—the statements of prisoners—we have evidence that depots of water are established somewhat to the east of the Canal, upon which depots it is hoped that a fairly continuous presence of troops may depend. But the whole of this evidence is still so fragmentary that nothing certain can be based upon it.

As the reader will observe if he looks at the sketch published in these comments some weeks ago, and here reproduced, regular fresh-water supply is not obtainable until the western bank of the Canal is reached. There there is a sweet water canal fed from the Nile. It was further remarked in the article then printed, that the best chance of a crossing would obviously be where the banks were high, the passage of the water narrow (a minimum of 180 feet), and cover from the fire of ships in the Canal most easily obtainable. These conditions are combined, or rather the height of the Sand Dunes suggests them, opposite Toussoum, where the strongest attack appears to have been made.

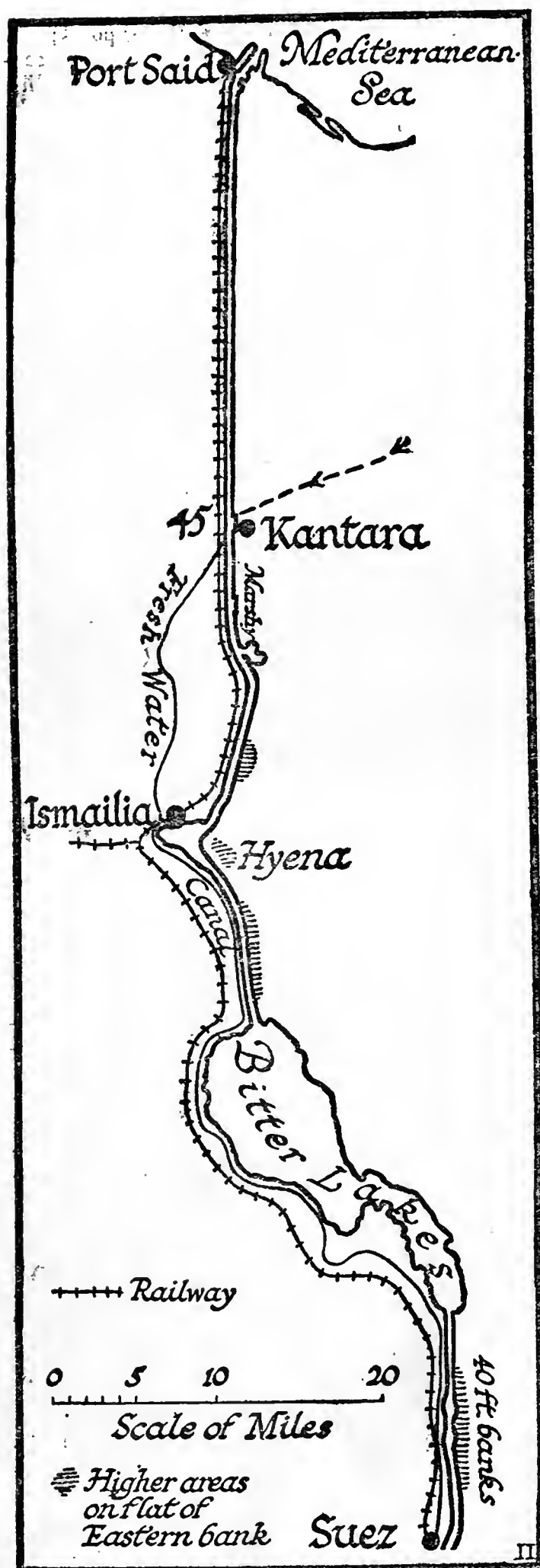
One last point is noteworthy in connection with these attacks on the Canal and those which are likely to succeed it: which is, that the enemy are apparently depending here upon mixed and inferior material for their recruitment. If ever they should be able to bring, by petrol traffic, fairly heavy pieces to threaten the Canal, and should depend upon the fire of such pieces, the comparatively small number of men upon whose efficiency the action of those pieces must depend would render the problem of recruitment for this army less acute; but so far as its main forces are concerned, a large proportion of them are Syrian in origin, in some measure disaffected, and, as we are told by those who have had opportunities for personally judging the matter, poor material. We have also in the official information from Egypt the remark that the collapse of the Turkish attack was accompanied by a certain measure of voluntary desertion, especially from this same Syrian element.

THE ACTION AT BOLIMOW.

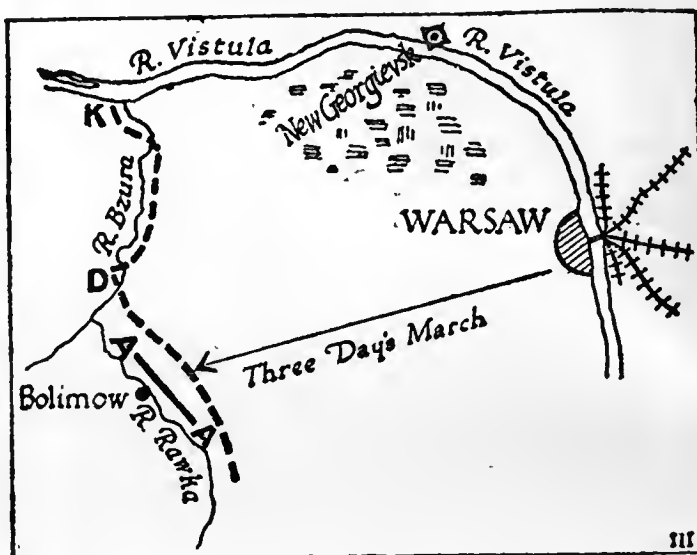
Next let us turn to the violent assault delivered this week upon the Russian lines defending Warsaw.

Although the movement resulting upon it has been slight, the attack made by von Hindenberg upon the lines of the Bzura and the Rawka was not without its importance, both as evidence of the enemy's condition here, and as an appreciable success for our Ally.

The ground is already familiar to those who have followed the sketch-maps published in these comments. The front of the Bzura and its little tributary the Rawka runs about three days' march



fail until it had been pressed with singular tenacity and with corresponding loss. Of the whole line (which stands at present much where the dots run upon the accompanying sketch) it was the front, A, A, just in front of Bolimow, the front most immediately threatening the city, which was chosen for this attack. It is not the German point nearest the city: that is on the Vistula. But an attack along the Vistula bank is impossible because of the fortress of Nev Georgievsk, between Warsaw and the mouth of the Bzura, and difficult, naturally, because the district is a belt of marshy forests on the left bank.



The German trenches are here upon the east of the Rawka—a position which does not represent any retirement of the Russian line, for the very slight rise of the ground for some little way in front of those trenches (becoming steeper as one goes eastward) gives the Russians an excellent line upon the low heights that look down on the little stream. Upon these 10,000 yards or so the enemy attacked with a force which may have been anything, in its present condition, from 80,000 to 120,000 men, and more probably nearer the former than the latter figure. The attack was supported by rather less than 100 guns a mile—no very heavy proportion for such a concentration—and both the fire of the German artillery and the massed German columns of infantry which were thrown against the Russian trenches were seeking to effect a breach only just wide enough for their purpose. In other words, they were limiting the hammer-blow by which they hoped to tear through the Russian defence to the very strictest and weightiest form compatible with a permanent success. You must not strike in too narrow a front, because, if your breach of an enemy's line is to be of permanent value, it must not be less than of a certain extent: it must be wide enough for you, when you have effected it, to have room to turn him left and right and begin hammering at the ragged edges of either of the two torn halves.

How near this 10,000-yard effort was to success we do not know, because we only have the account of one of the combatants. For the same reason we cannot decide what the total losses of the defeated assailants may have been.

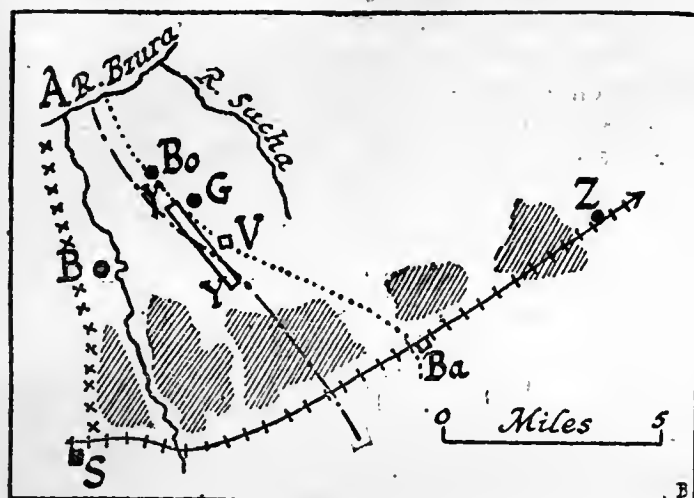
The account which puts them at 30,000 must almost certainly be exaggerated. Such a proportion of losses out of such a force in such a time would be crippling, and no commander would risk being thus weakened, unless, indeed, at the most expensive moment of the action success had seemed

away, west of Warsaw; and that front has been maintained for now two months almost unaltered.

The great attack of the other day, in which something less than four corps (the equivalent of that with which von Kluck struck at the British contingent at the opening of the war) massed upon a front of about 10,000 yards was engaged, did not

so nearly certain as to warrant a local—and brief—continued waste of men. But though the figure 30,000 may be too high, the losses must certainly have been, from the nature of the fighting, severe. It must never be forgotten that a great assault which fails is tactically, and for the front which it covers, a defeat. You come out of it not *as* you were, but *weaker* than you were, both morally and materially; and that in proportion to the effort you made to succeed. So true is this that in the case of the action before Bolimow the Russians, when they had repelled the enemy, were able to make certain advances; notably just below the junction of the Rawa with the Bzura, at the point marked D, and at the point marked K (which is the village of Kamion). In both these points the Russians crossed the river and established themselves upon the further side.

The details of the action are fairly simple.



From in front of Skierniewicz (S), past Bolimow (B), runs the little river *Rawa*, which falls into the Bzura at A. It has in front of Skierniewicz a belt of woods on either bank (marked with shading on the plan) which stretch all along the railway to Warsaw, past the roadside station of Bednary (at Ba) to Zyradov, at Z.

On either side the ground falls gently down to the Rawa; but on the *eastern* side there is a roll down again to the little parallel stream of the Sucha, and on the crest of this roll, or rather just in front of it, covering Borjumov (Bo), Gumine (G), and the Chateau and Works of Volia Shidlovska (V), run the Russian trenches. The German trenches face them, between the crest and the River Rawa. From Z to Warsaw is about twenty-six miles.

The Germans massed their guns on the night of Tuesday last, February 2, on the ridge west of the Rawa, along the crest I have marked with a line of crosses. It was a snowy night. Air work was impossible, and they took advantage of the weather to concentrate on that narrow front, from S to not quite A, nearly four corps. That same night they attacked the positions Bo-G-V-Ba, grouping their densest force just north of the woods against V on a section Y-Y, about 3,000 yards in length, or less than a third of their total local front. All Wednesday the advance made ground. The Chateau at V was occupied, so was Gumine, G; while behind the woods and up the railway the Germans carried the station of Bednary (Ba) in a *corps-à-corps*. Upon Thursday, February 4, the issue was still doubtful; the Russian line still pushed back to the crest or beyond it,

and the weather still a scurry of snow. But on Friday the tide turned; by the Friday night the whole crest was recovered, and by Saturday morning the German line (whose most advanced points had reached to the dots on the sketch) was back west of the line of dots and dashes which roughly represents the present Russian positions.

The massed attack smouldered out on the Sunday and ceased altogether on Monday, the 8th. It had, after six days of effort, quite failed.

But the local result along that front (which might give to the action the name of Bolimow, for that is the name of the village just beyond the stream on the slopes in the neighbourhood of which the artillery was posted) is not perhaps of such importance as is the indication it affords of the enemy's general attitude towards his chances upon the eastern front. This last violent bid for Warsaw means that the pressure in East Prussia is being felt. It means also, perhaps, that the pressure upon the central Carpathians, to which I will turn in a moment, is giving anxiety. It is true that in East Prussia considerable enemy reinforcements have arrived, so that the forward movement of our ally there would seem for the moment to be held; and it is further true that in the Carpathians the Russians' advance in the centre has gone with a retirement upon the southern extremity of their line. But these heavy blows delivered by von Hindenburg upon the centre in Western Poland have hitherto been directly connected with the desire to draw pressure off some other part of the line, and it is probable that this last action in front of Bolimow was no exception to the rule.

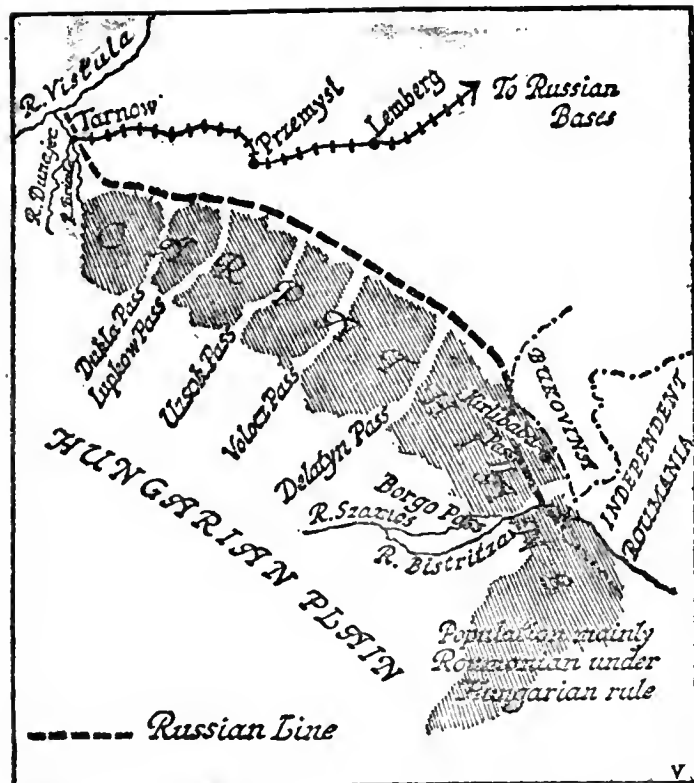
THE SITUATION IN THE CARPATHIANS.

I said last week that the Russian effort was in the main intended, when the advance was resumed upon the Carpathians, to press over near the Roumanian frontier and from the Bukovina; while the enemy's object was rather to bring pressure to bear in the central portion, westward of and south-westward of Przemyśl. In the fighting that has followed, each party has failed exactly where he chiefly attempted to succeed—and that is always what happens when you meet a blow by countering elsewhere, in the set German fashion.

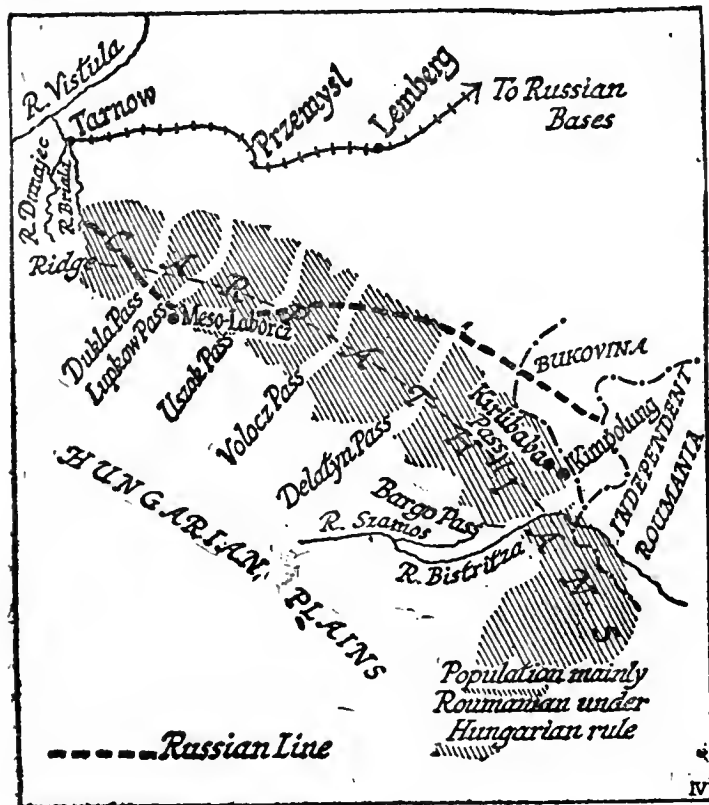
The enemy have been compelled to fall back, perhaps, over the Dukla, certainly over the railway pass immediately to the east of the Dukla, because the Russian communiqués speak now of the front passing in this region through Meso-Laborcz; and as Meso-Laborcz is beyond the ridge this should mean that the Russian advanced bodies are here over the main crest of the range. This advantage is not absolutely certain; it is only to be presumed from the wording of the communiqués issued by one side, but it is a probable inference.

In the Bukovina, on the other hand, there has been a retirement of the Russian forces before an advance in considerable strength of the enemy. The enemy have not only re-occupied the heights, as the summit of the Kirlibaba Pass, but have passed over the Borgo and have entered Kimpolung.

The double situation, and the change from the corresponding situation some ten days ago, may best be seen by comparing the following sketch, where the Russian line is marked in what is its



present probable position, with the corresponding line in the same region indicated in the sketch map appearing last week, which I here reproduce.



Whether the considerable reinforcements along the Bukovina front, which we know to include German troops—probably Bavarian for the most part—include new German formations or not we cannot gather from the evidence. And that is a pity, because our judgment of the future of the campaign at this stage very largely depends upon our discovering whether the enemy has begun to use his new formations yet or not, and, if so, in what numbers.

It is already more than six months since the first mobilisation: he must in such a space of time have had full opportunities for training, and from what we know of him he must surely have had them ready provided with a sufficient equipment. The more of his new formations that may now be actually present, or that may have been present in the

recent fighting, the less reserve is there to be used for the renewed offensive upon the west.

It is possible that in the captures of the next few days, if our ally continues to press across the central portion of the range, we shall have in more detail the evidence upon this very important point which is at present lacking.

THE WESTERN FRONT.

There is upon the western front in the present week nothing to record of any importance, at the moment of writing, Tuesday evening. The front has fluctuated in no point appreciably, and, save for the engagement of two or three battalions in the heart of the Argonne, there has not apparently been any attempt at a movement.

It is hardly worth remarking that the German official communiqué has been at the pains of denying that the considerable effort made at the end of January (round about January 27), which effort was broken with the loss of perhaps 20,000 men, had no connection with the Emperor's birthday.

It was, according to the German version, no more than a coincidence. Whether these things are coincidences or no only has this value to a student of the war: that if the non-military motives at work are as strong as we believe them to be they are some guide to the state of mind of the enemy. There is no more in it than that. I forget, for instance, on exactly what date it was that the Germans went through the Arc de Triomphe in Paris after the cessation of hostilities in 1871, but if anyone will look up that date and see whether it corresponds to a particularly strong German effort in the west it will help him to form his judgment. Hitherto it has undoubtedly been true that these almost religious exercises have influenced the plans of the enemy in some degree.

THE CASUALTIES.

The official returns of the total casualties to the 4th of February in the British contingent of the Allied armies, coupled with a recent publication of the Prussian lists, affords a new opportunity for the comparison of *wastage*.

Our casualties here will be found to support the general conclusions which have been arrived at in these notes with regard to the former rate of wastage in the Allied service and in the enemy's, and to prove how much heavier is his than ours.

The British casualties are just over one hundred thousand, and that means, roughly, 25 per cent. of all those who have at one moment or another crossed the sea. These figures are very nearly in the same proportion as those which can be deduced from the French declaration late last autumn—allowing for the passage of time since that declaration was made.

It is interesting to compare such rate of wastage with the official German figures: but it is impossible, unfortunately, to accept the official German figures as the equivalent of the English, and that for two reasons: First, the Germans do not put down the cases of lightly wounded; secondly, there is no compendary German declaration of casualties *to date*, but only the publication of long lists, which are necessarily imperfect and belated; as are, for that matter, the newspaper lists published on our own side.

The fundamental factor in any such calculation is the relation of wounded to killed. It has repeatedly been affirmed in these notes that a

multiple, certainly not less than 7, is safe. Of 8 men that fall on a large average but 1 is killed; or again, if we know how many are killed, then to find less than seven times as many wounded may convince us that the lighter cases are not mentioned.

This principle has been challenged by many critics, but I think it remains firm when one is considering great bodies of men, and averaging losses over many hundred thousands. It is a highly conservative estimate, as the British figures prove, and the fighting has not spared the British. Upon that basis the German multiple, which was under 4, and is still a good deal less than 5, will not do; it *must* mean that the Germans only note grave wounds (which the relatives of the wounded men should hear of), and death.

Then Prussia admits in her lists just under a million casualties. Many of the entries appearing are so far back as August 20th, and the lack of any reports from recent heavy fighting in Poland and the Carpathians justify us in turning that million into twelve hundred thousand. It is probably more. Next we must add to this 1,200,000 the lighter cases (for though these return, as do ours, they are necessary to the total which we are about to compare with ours), and add at least 50 per cent. for these—for if you add to a multiple of less than 5 in order to reach the very reasonable and certainly too low multiple of 7, you must add 50 per cent. to the first figures—add that 50 per cent. for light wounds, and it turns your 1,200,000 into 1,800,000 of Prussian hit and caught, apart from sickness. The reality is almost certainly nearer two millions or even beyond two millions, but we are here deliberately making what is called a “conservative” estimate, *i.e.*, an estimate against our expectations or hopes.

Here, then, you have 1,800,000 for the *total* Prussian lists if (a) all casualties whatsoever were included; (b) all to the present day were collected. Now to these Prussian lists of all kinds you must add the lists of the non-Prussian parts of the army, which I now take to mean (though at first I believed it meant more—all who were not technically Prussian) the Saxon, the Wurtemberg and Bavarian contingents alone. These are rather less than a quarter, but much more than a fifth, of the total armed population of the Empire. Supposing we add 400,000 for these unknown published extras (which is only just over 22 per cent.—the real figure is nearer 23) and you get 2,200,000, *excluding sickness in any form*, for your grand total.

Now what percentage is that of the men put under arms up to now by the German Government? When we have discovered that we are in a position to compare our wastage with theirs.

Our wastage, remember, we found to be about 25 per cent.

The men put under arms by the German Government so far are certainly not less than five millions. If they have brought none of their new formations into the field save an insignificant number of volunteers, then their losses stand in the very high proportion of 44 per cent. of casualties of all kinds, excluding sickness, out of the total number of men they have up to now put under arms. But it is wise to weight the scales against one's own expectations and to allow a larger number than five millions armed to date and therefore a lower percentage of casualties. But the Germans have certainly not yet armed six million men. Let

us suppose that they have armed as many as five and a half millions so far, then their losses in casualties of all kinds, excluding sickness, will be forty per cent., and that I believe to be not far from the true estimate.

I believe that when the history of the war is written it will be discovered that of every *hundred* men put into uniform and given a weapon in the German Empire from the outbreak of the war to the beginning of February, 1915, *forty* were hit or caught; and I equally believe it to be a just estimate, which the history of the war will prove when it comes to be written, that the casualties of the Allies (in the West at least) are, to the casualties of their opponents, in a proportion not very different from that of twenty-five to forty.

This great difference is one of the prime factors in the changed aspect of the war as it proceeds, and in the opportunity for the Allies' attaining an ultimate numerical preponderance.

If it be asked why this difference in wastage should exist I think the answer is found both in the expectations with which the enemy forced this war and in the method by which he has therefore conducted it, as well as in the tactical traditions of his service.

To win rapidly, and therefore necessarily at a high expense of men, was at the very core of the German plan. To use tactical methods which were also expensive of men, was a tradition from which he neither could nor desired to escape, and we know by his quite recent action in front of Bolimow that he has not modified this tradition in the least, even after the exceedingly heavy lessons taught him, and even though the campaign has now endured long beyond his first expectations, and has cost him far more in men and in material than he had planned for upon his most extreme provision.

Certain consequences follow from this tremendous rate of wastage in which, however, I have made no effort to estimate the corresponding margin of sickness. The first consequence is one which somewhat modifies our view of the enemy's increasing weakness through wastage. We must remember that about one-half of those who are wounded can return to some form of service. One half of the wounded, excluding the killed and the prisoners, is about three-eighths of the casualties. Now three-eighths of 40 per cent. is more than three-eighths of 25 per cent., and the total number of killed, *disabled* or caught upon the enemy's side, is, therefore, not in so high a percentage compared with ours as on a first view one might conclude. When you have allowed for the returns of the lighter cases, you get only one quarter of the German forces permanently out of the running, while you get for the Allies on the West between 15 and 16 per cent., or something rather less than one-sixth.

The next inference from our figures is one that very closely touches the immediate future of the war.

We know from past calculations based upon official lists what indeed might have been expected from the nature of Prussian fighting that the loss in officers has been particularly heavy, even heavier than it has been among the Allies in proportion, and we are fairly safe in estimating that not far short of one-half of this professional body upon which the enemy's service is utterly dependent for cohesion is now out of the field, that is, not far short of one-half of those officers employed in the active line and in

command of units, as distinguished from those employed behind the army and upon the staffs.

Well, the action of the new formations which Germany proposes to bring into the field has always threatened the Allies with its superior efficiency on this very score. The enemy has told us that though we could raise in the case of Russia and of England very large new formations limited in amount rather by the slowness of equipment than by the lack of recruits, our great difficulty would be the provision of a sufficient body of officers. As against the original force which the enemy put into the field and with which he proposed to win a short and decisive campaign that prediction was sound. It will hardly apply to his new formations now. There is, indeed, a carefully arranged system whereby reserve officers of more or less training are prepared for such formations, but their value cannot be compared naturally with the professional soldiers who are now permanently out of the field.

It would be very foolish to exaggerate this element in the situation, but it is not one to be neglected. What would perhaps be still more interesting and what unfortunately we have not been told is the rate of loss among the non-commissioned officers of the German service. For the German service differs from others, particularly from the French, in the way in which these men are obtained. They are as a body distinct in age and in outlook from the mass of those whom they command. They are older, they are professional soldiers, they are picked for character and to some extent for social position. They furnish later the lower elements of that highly developed bureaucratic system, which the modern German Empire has established to the admiration of certain of its

enemies, to the disgust of others. At any rate the new formations are still more difficult to imagine lacking this element than lacking their proper element of professional officers. For with all the military excellences attached to the service of our enemies elasticity and initiative in the lower ranks are not among them. One may say without either exaggeration or the fear of that detestable error which consists in belittling one's opponent that the Germans could not improvise armies as Great Britain is doing to-day, or that they would maintain an improvement under the strain of war such as the French service has maintained. It is the corollary of their full prevision, with its prepared equipment and all the rest, that the duration of the war beyond its expected limit and the wearing down of the original military framework upon which it depended tells more severely in the German case than in ours. The last conclusion connected with this calculation of wastage is the chief one; and that is, that progressing as it does at a greater rate than that of their opponents, the numerical superiority of the central powers—which they still retain by a precarious margin—will, if they cannot effect a decision within the next few weeks, disappear altogether, and that the gradual equipment of the Russians and of the new British contingents will at least dip the scale against them. And we have yet to see how they will meet a campaign under the conditions of numerical inferiority; for we must remember that the whole scheme of German strategic and tactical traditions is based upon a certitude of numerical superiority against the enemy, as is their treatment of permanent fortifications and every other product of their military mind.

A FURTHER ECONOMIC POINT.

THESE notes dealt last week with the elements of one side of the economic factor in war—the real effect of a metal reserve, and of the instruments of credit based upon it to a nation fighting for its life, and it was attempted to be shown that the importance of such a reserve and the instruments based upon it was very greatly exaggerated by such financiers as have come to consider the mere economic effort almost entirely in terms of the mere medium of exchange. It was attempted to be shown that, save in a doubtful case of certain foreign supplies, our enemies would be able to continue the war even under the strain of an increasingly adverse exchange. While for internal effort they were free even if their currency should break down altogether—of which, by the way, there is no likelihood or sign.

Perhaps it may be advisable in the lack of general news this week to turn to another aspect of the economic question, which is the strain imposed upon the Allies by their present rate of expenditure. It is a question which has come to the front lately through the meeting of the various Parliamentarians nominally responsible for finance in the various allied Governments. *The economic strain imposed upon a nation by its expenditure of material during a great war is not to be measured in terms of the strain imposed upon its exchequer.*

What the public authorities are spending is indeed some guide to the real strain. It bears a

certain relation to it. But it is neither parallel nor equivalent to it, and one nation, spending apparently far more than another equally wealthy, may in reality be under a far less severe economic strain. To appreciate this, let us examine what it is that a nation consumes of its wealth under the effect of a great war. A great war consumes or lessens the wealth of a nation in two ways—direct and indirect. It consumes the wealth of the nation directly by the destruction of existing wealth, whether when the enemy destroys such existing wealth or when the military authorities of the nation itself destroy such existing wealth for military reasons. Indirectly a great war lessens the potential wealth of a country, or lessens its wealth production for a considerable space of time because it puts the economic energies of the nation to the production of things not useful in normal times, and therefore not usable in consumption save during the period of war; it further reduces the economic power of a nation by taking men from the manufacture of things which will help to produce further wealth and putting them to the manufacture of things which, once consumed, produce no further wealth; finally, it dislocates the normal machinery of production, and leaves many producers without a demand for their wares.

All that expenditure upon the part of the national exchequer which is effected under the headings of the nourishment, the billeting, and the paying of troops, the paying for service other than

military services, the provision of pensions, of uniforms, huts, etc., and even the production of armament; the hire of transports, of colliers, the ordering of every kind of material for the conduct of the campaign, is not equivalent to an added consumption of national wealth. It is merely for the time being the canalisation of economic wealth into channels other than those which it usually follows in time of peace, and what is more, this canalisation is upon the whole (for the moment only) a social benefit; for it tends to provide necessities for the poor and to check the provision of luxuries for the rich. When you tax a rich man heavily for war purposes and use the money for producing uniforms and boots you are, in fact, destroying his power of demand which would have produced a fur coat, and using that power of demand to cause the production of boots and clothing which will keep a large number of the poorer members of society from the weather. In the same way, when you tax a wealthy woman heavily in time of war and give high pensions to the widows of soldiers you are turning what was the power of demand for a new motor-car into the power of demand for bread and meat and milk, and so forth all along the line. A nation that chooses to be generous in its payment and equipment of soldiers and raises the money as far as possible from its wealthier classes is not really "spending" newly apparent large sums at all.

Of direct destruction of wealth, of direct expenditure, of real consumption in war of what would not have been consumption in peace, in a word, of extra strain, you have two forms,—first the destruction of existing wealth by the enemy or by one's own forces—as when the enemy dropped bombs on Great Yarmouth, or when we dig trenches across a man's garden on the East Coast: secondly, the loss which arises from the disorganisation of society, from a sudden call upon men to do new, unusual things for which they are ill fitted, and a sudden cessation of their activities in a field where they have acquired experience and dexterity. This dislocation takes a thousand shapes. You see it most clearly perhaps in the professional classes and some skilled artisans where there is a gap, lasting often as long as the war itself, between a man's power to produce wealth upon his ordinary lines and his opportunity for turning to some new activity. In peace, for instance, a rich man was prepared to give a hundred measures of wheat to a skilled artist who would produce him a certain piece of furniture, in war the hundred measures of wheat are taken to feed the armies. It does not follow that the skilled maker of the furniture will either be able to join the service or to take up any other form of production, in which case the commonwealth as a whole does lose such economic values as he would have produced had he been employed to make the furniture.

In the first of these categories Great Britain has suffered very slightly: far less than any of her Allies. For there has been as yet no serious destruction of property either by the enemy or by her Government for the purposes of war within her boundaries. In the second category also the expense has been surprisingly small and the transformation of society has been effected with comparatively slight friction.

But the indirect effects which follow upon the setting of men to non-productive from productive

tasks is serious in the case of an industrial country such as this. There is already an indirect form of loss through the closing of one great market with which the industries of Great Britain exchanged. And since what comes into this island is largely, if not entirely, procured by the exchange of what goes out of it, and since what goes out of it and is offered for exchange is provided by labour and capital used in a reproductive manner, the putting of men to tasks which give, when they are accomplished, material that can never form capital or be used for the production of wealth, ultimately lowers the economic power of a nation: Lowers it progressively and cumulatively as time goes on, and is particularly noticeable after the lapse of one complete year, because it is within the cycle of a year that agricultural production, upon which ultimately all economic effort depends, runs through its cycle.

You have a hundred measures of wheat which are your capital. You use them to feed sailors who take a ship across the sea for you and bring you back more measures of wheat. Or you use them in feeding labourers who till the land for you and this produces further wheat. Your capital is used productively. But use them in feeding the crews of transports who take your troops across the sea, or in the feeding of these troops themselves in the field, and there does not result from your expenditure any further wealth. It ends in its consumption. Similarly, if you burn a certain amount of coal in the production of an engine for creating wealth, such as a loom, your coal, though consumed, has been an agent for producing further wealth; but if you burn your coal to make a shell, then, when your shell has been delivered and exploded, the process is at an end, and no further wealth has resulted from the consumption of your product. The conclusion of any such analysis must be very plain. It is two-fold. First the mere figures of national expenditure conceal the truth and give rise to an illusion. That nation appears to be spending most which is providing most generously for equipment, pay, and the rest of it, but during all the earlier part of the process the total economic position remains precisely the same as though the Government had left the taxes at their ordinary cost during a time of peace, the real expenditure being during the first few months of a great war. In the case of a nation whose territory is not damaged, when a certain time has elapsed, and particularly after the revolution of one year, a sharp strain is felt and that strain increases, because as time proceeds you discover that your people have not been producing wealth at the old rate, and the effect of this cessation of useful and its replacement by unuseful labour is cumulative. When wars are severe and comparatively short of duration one may expect a period of great strain immediately after their conclusion, but hardly an economic strain during their progress. When wars are lengthy, the double strain is felt of exhaustion in stocks and of impotence to replace those stocks. And of course if the territory of the nation is ravaged as well you come to enormous items of expenditure, such as have ruined Belgium and a fringe of France, and of East Prussia and of Western Poland.

Mr. HILAIRE BELLOC will lecture on the "Progress of the War" at Queen's Hall at 8.30, February 17. Tickets for this lecture are now nearly all sold.

Mr. FRED T. JANE will lecture on the "Naval War" at Queen's Hall at 8.30, February 26.

PROFESSOR V. B. LEWES will lecture on "Modern Explosives" (with experiments) at Queen's Hall at 8.30, March 2.

Schools, societies, etc., should apply at the Hall for special terms.

THE WAR BY WATER.

By FRED T. JANE.

NOTE.—This Article has been submitted to the Press Bureau, which does not object to the publication as censored, and takes no responsibility for the correctness of the statements.

THE NORTH SEA.

THE most important item of news this week is, of course, Germany's declaration of a "general blockade" under terms of something very like piracy pure and simple. If the official German statement means anything at all, it means that both British and neutral merchant ships are to be submarined without warning and their crews left to drown in a desperate attempt to create "frightfulness." It is true that certain exemptions have since been made, but they have probably only a paper value.

Since the method has actually been put into operation—even to the extent of discharging torpedoes at a hospital ship—we must take it as a war idea seriously embarked on by Germany.

That the Germans regard nothing as sacred where to disregard offers advantage we have long known. But Germany apparently half-prepared to assert "If you won't be a friend, you can be an enemy for all I care" is a new proposition. It is not an unsound one from the German standpoint.

Along the lines on which this war is being conducted it can make little military difference to Germany whether the United States be a strict neutral or an active enemy. In her relations with lesser neutrals the situation is not very materially different. In the ordinary way—if the United States indulged in indiscriminate blockade running—a small neutral state may be inclined to pass on contraband to Germany. But if a strong neutral like the U.S.A. is quarrelled with, a stopper is at once put on the hypothetical smuggler. There is nothing left to smuggle with!

Now, so far as the United States as a neutral is concerned, it matters nothing at all to her whether she trades with us or Germany, provided the *profits* be the same. But it certainly matters a very great deal whether trade with Germany means detention and Prize Court proceedings, whereas trade with England might entail the chance of destruction without warning.

Out of which I am inclined to think that the first result of Germany's declaration of piratical intentions will be to Germany's advantage. I do not think that the advantage will last, because sooner or later German pirates will sink by mistake an American ship or a ship carrying Americans. Then, if these are left to drown, there will be serious trouble. From the military standpoint such trouble would not affect Germany. The naval odds against her are already such that she could view an increase of odds with comparative equanimity. Taking distances into consideration, America, if involved, could do little or nothing on the spot to counteract the submarine campaign.

Indirectly, of course, by the stoppage of shipments she could hamper Germany enormously, but it might hamper American trade to an almost equal extent. Consequently the Germans reckon steadily on a "nothing doing." And this probably is exactly what will obtain until they leave a score or so of American citizens to drown "by mistake."

Sooner or later, of course, this will happen. Then—but I am afraid not till then—will Germany realise the analogy of the pig which attempts to swim and so cuts its own throat.

This will be the end of their submarine warfare against our commerce. But it is idle to disguise that they have taken the last desperate step; and though every post brings me half-a-dozen "ideas" as to how to fight submarines, the bed-rock fact remains that the problem is yet unsolved.

Eventually, of course, it will be. But it is not accomplished yet, and there are no indications as yet that the real "how to do it" has yet been discovered. It *will* be. But we are still waiting for the will-be: and a thousand well-meaning and patriotic civilians who have never been inside a submarine in their lives will never hit off the antidote. Some day the technical folk will, and then the aspect of affairs will change. But every single suggestion which has been sent in is of the "put salt on the bird's tail" order. Many of the suggestions sent in display a high ingenuity; yet one and all invariably forget the cardinal fact that by the time the submarine is located she has probably discharged her torpedoes. The future lies with the inventor who can discover a submarine at least five miles off. He will not do it with a microphone—ideas on those lines have been tried, and

failed. There is possibly some opening for a camera obscura able to differentiate between the vertical lines of a periscope and the horizontal lines of a wave, but only an extremely smart optician (or someone in some such line of business) would have a chance of tumbling across it. There is not the ghost of a chance of any amateur finding out how to do it. And unless the skilled optician had some very clear idea as to how submarines work I am afraid that he would do little better than the ordinary amateurs.

I am strongly of opinion that the British Navy will solve the apparently impossible submarine problem just as it solved many another apparently impossible problem in the past. The swarm of privateers in the Napoleonic wars constituted a very serious problem, but it was eventually dealt with. Every bane has its antidote.

For the rest we can only express the hope that our people will emulate the Russians who, having caught some Germans dropping bombs from a dirigible on an undefended town, have definitely declared that they will treat them as common felons. If we catch any German submarine folk who have torpedoed merchant ships without warning and left the crews to drown, it is to be hoped that we will have the sense to hang them off-hand, and if circumstances admit to hang them at the yard arm of their trawler mother ship from which they worked, and to set that trawler drifting for the rest of the pirates to see! It is true that the prospect of being hanged in chains did not do much to deter the pirates of the old days, but it has to be remembered that Captain Kidd and his fellows operated solely for loot, and that the circumstance of being invariably drunk served to render them philosophical as to their ultimate fates.



MAP TO ILLUSTRATE AREA OF U21'S OPERATIONS.

The Neutral Flag and Passive Defence.

The fact that a submarine can torpedo a merchant ship quite unawares is not entirely advantageous to the submarine or entirely to the disadvantage of the liner. A submarine lying submerged taking peeps through her periscope, especially if any sea be on, has very limited vision, and is somewhat in the position of a sea anemone which has to wait for its prey to come to it. The odds, therefore, are greatly against any particular merchant ship coinciding with any particular submarine. That is why *U21* operated on the surface; it gave her better vision and considerably more speed.

Supposing the Germans to think better of the full terms of their declaration about attacking British and neutral ships alike, it is presumed that by using a neutral flag British ships would have ample opportunities of evasion.

The ruse would be quite legitimate; but its practicality is perhaps another matter. It would give the Germans an excuse for any neutral sunk on the grounds of "suspected British" and increase the risks of neutrals. Out of which I

am inclined to think that, as in the past wars, our trade will have to be carried on under the Red Ensign, and the risks of such damage as enemy submarines can do taken in the same chapter of accidents as stray mines have to be taken. And we shall probably find that the threat is far worse than the accomplishment.

The North Sea Action.

There is a tendency in some quarters to criticise Admiral Beatty on the grounds that he did not allow the Germans to get nearer to our shores and commence bombarding while he cut off their retreat. Criticism of this sort is easy on paper; but apart from the fact that a raid may not have been the German objective, is the circumstance that the Germans appear to have turned tail directly they sighted our light squadron—though here, incidentally, their aircraft may have spotted our battle cruisers likewise.

Undoubtedly this is the main purpose for which aerial scouts at present exist, and a fleet seeking to evade action with a stronger force is probably strengthened accordingly. In a word, the attack is far more difficult to-day than it was ten years ago. Before the war speculations to this effect were many and various. It is curious that what appears to be the first practical demonstration should have happened without comment of any sort.

ANSWERS TO CORRESPONDENTS.

A. D. (Corstorphine).—If the Germans took the *Blücher* to be a British warship sinking they would have been quite as justified in dropping bombs on her as we were in torpedoing her. So long as a ship keeps her colours flying she is deemed to be still fighting.

R. R. O. (Birkenhead).—A periscope is a difficult thing to see at the best of times, and no one but a submarine officer would have any chance whatever of detecting the nationality of an attacking periscope. When boats are on the surface there is no difficulty whatever in recognising a German boat on account of a peculiar rise in the bow.

G. S. W. (Tunbridge Wells).—In discussing the North Sea action I was guided entirely by Admiral Beatty's statement that the *Lion* and *Tiger* were separated from the rest of the Fleet. Hipper was certainly capable of seeing that, and equally seeing that the *Lion* was hit, and had an opportunity of which he did not or could not avail himself. As regards the speed at which the battle was fought, it was certainly nothing approaching the maximum speeds which have been recorded of the various vessels engaged. Very high trial speeds have been recorded for various ships. For example, the *Blücher* on her trials reached 25.8, but it is doubtful if she could have maintained more than a speed of 23 knots during the chase, and that was probably the speed of the German squadron.

As regards the more modern vessels, they are all turbine-driven, and speed with turbine ships is somewhat of an elusive quantity. That is to say, there is a certain high speed which can be maintained for several hours on end, and there is also a considerably higher speed which can be reached during a short special spurt.

B. S. (Cambridge).—As a rule, large ships are always accompanied by small craft. Light cruisers and destroyers are more capable of picking up a crew in the water than any extemporised slow vessel would be.

F. W. (Lincoln).—At the time the loop was made the *Scharnhorst* was clearly in a critical condition, and probably the *Gneisenau* was considerably winged. Neither ship probably was in a position to attempt anything tactical. The loop of the British Fleet was presumably to get clear of the smoke (as stated). Incidentally a ship end-on is more likely to be hit than one broadside-on, the difference between a hit and a miss being mainly a matter of elevation. Supposing a ship to have a freeboard of 25 feet, the target offered by her would be approximately 30 feet, as a shot passing at, say, 27 feet would pitch on the deck somewhere on the other side of the vessel. The beam of a ship 75 feet or so broad is roughly equivalent to a vertical target of five feet. Supposing a ship to be end-on, instead of the target representing 30 feet it would for a ship 500 feet long be something like 65 feet, and therefore twice as likely to be hit.

J. R. C. (Dublin).—The German armoured cruiser to which you refer is the *Ersatz Hertha*, which was laid down in July, 1913. Nothing very definite is known about her, i.e., whether she is a sister to the *Derfflinger*, with eight 12-inch guns, or whether she carries a lesser number of 15-inch. It is more probable that she is a sister of the *Derfflinger* and *Tutow*. In any case, the idea that she can be both faster and more heavily armed than anything we possess or have building strikes me as highly improbable, the more so as the German practice for the last few years has been to sacrifice a

certain amount of gun power for the sake of better protection. Our 1914 Naval Estimates provided for one ship of the *Queen Elizabeth* class, and three battleships. When war broke out there were five "battleship cruisers" of the *Queen Elizabeth* class under construction. In any case, the war will probably be over some while before the *Ersatz Hertha* is completed.

Lieutenant (Sheffield).—(1) The *Agincourt* was originally the *Sultan Mehmet Rehad V*. All her guns are mounted in the centre line, and she is practically the same as British ships of equal date.

(2) The Chilian ships at the beginning of the war were the *Almirante Latorre* (taken over), and the *Almirante Cochrane*. The ships building for foreign countries in German yards at the outbreak of the war were the Greek battle cruiser *Salamis*, two small Russian cruisers, *Mooraviev Amursky* and *Nevelskoy*, and two destroyers for Holland. These were all taken over by the German Navy. Two or three other Chinese destroyers were reported to be on order, but it is doubtful if they have been commenced.

At Monfalcone, in Austria, there were building for China one cruiser of 4,900 tons and three cruisers of 1,900 tons. In addition, at the Stabilimento Tecnico, twelve destroyers were on order for China, but it is doubtful if any of them were laid down at the outbreak of war.

(3) The *Lion* and *Tiger* have the same armament, but the disposition is such that, whereas the former only bears two guns right aft, the latter bears four. Our first ship to carry 15-inch guns was laid down so long ago as October, 1912, whereas the first German ship mounting 15-inch guns was not laid down until April, 1913, and they can hardly complete her much before the end of the present year.

J. L. G. (Westminster).—(1) I think that it is extremely probable, if not certain, that the East Coast raids were "managed" by German agents in this country.

(2) The question you raise as to why, if the *Formidable* was really sunk by a German submarine, the German Admiralty has not published the number of that vessel, is very intricate. Personally I still keep an open mind on the question, and think that it is quite on the cards that she blundered into a mine which had broken adrift, and that the second explosion had something to do with the boilers.

An alternate possibility is that if it were a German submarine she went down with her victim.

(3) So far as attrition is concerned, the Germans are certainly making nothing out of it, nor are they ever likely to do so.

H. H. (Le Court).—As regards your query about the German submarine coming alongside a victim flying the white ensign, it is idle to discuss whether the Germans were right or wrong in doing so. Up to a certain point the rules of naval warfare allow of the misuse of flags, but the Germans are bound by no laws or rules whatever; and there is nothing more to be said.

M. H. L. S. (Reading).—Many thanks for yours. In reply: If the Admiralty suppresses good news they have probably some strategical object in view in doing so, and their reticence should be supported at all costs.

S. M. M. (Edinburgh).—I am sorry, but I do not think that it is advisable to discuss the scheme to which you refer, though it may interest you to know that it was invented by a German, and that if our people make use of it the Kaiser is being hoist by his own petard.

M. T. W. (Scarborough).—I am greatly interested in your letter. The figure eleven on a piece of shell which landed near you does not go for anything, because the Germans use the metric system.

The "washers" to which you refer are probably the bands round the shell, which enable it to grip the rifling when leaving the gun. If there was an 8.2, that would probably have come from the *Yorck*, which was known to have been there.

The only other German armoured cruiser with four funnels which could have paid attention to you is the *Roon*; the other two four-funnellers, the *Scharnhorst* and *Gneisenau*, were attended to by Admiral Sturdee off the Falkland Islands. All the battle cruisers have two funnels only, and the *Blücher* only had two funnels. I think you may take it that it was either the *Roon* or the *Yorck* which paid its attentions to you and your fellow-townsmen, although the story exists to the effect that the *Von der Tann* was in that particular "baby-killing expedition," and got hit from behind by a torpedo from a British destroyer.

J. R. P. (Grantham).—(1) I am afraid that it is outside my province to advise the particular newspaper you mention "not to make an ass of itself over the perspective of naval operations." It is the prerogative of the halfpenny press to lay things on thick. The reason they do so is that their public demands it.

(2) What with German spies and other things, I do not see how your suggestion could be got to work.

(3) Your suggestion of electrically-driven pumps which should be employed to squirt water into the German trenches is more in Colonel Maude's line than mine. From what I hear from friends in the trenches the Germans are much more careful than we are in the matter of arranging their drainage; but when you get out there I am certainly of opinion that you might do a great deal to make our trenches more comfortable, if you got your idea adopted and could solve the mud problem.

W. H. (London).—You ask why not hunt submarines as we hunt whales? This idea was promulgated by Lord Charles Beresford about eighteen months ago. The trouble is that, although the analogy between the whale and the submarine is correct, the whale is a silly sort of animal, entirely ignorant that it is in any danger; the submarine, on the other hand, is a terribly intelligent whale.

As regards your statement that as an "exciting, profitable, and glorious sport it should surpass anything yet seen on land or water, and that there would be no lack of men to take part in it," if it could be got up as a new kind of sport, it is not impossible that—supposing enough participants—some results might be obtained, but I am rather afraid that, taking all circumstances into consideration, the odds are that amateur sportsmen engaged in the job would be rather more dangerous to British submarines than to German ones.

J. W. S. (Sanderstead).—It is quite true that if a submarine fires a torpedo at a ship at too close a range she is quite likely to be destroyed by her own action. I have noted your suggestion, and have forwarded it to the proper quarter. I do not think that it is novel. It is all right in theory, but certain technical difficulties seem in the way. Quite apart from the Press Censor, you may rest assured that no idea likely to give a hint to the enemy would be published in the columns of LAND AND WATER.

J. H. B. (Edinburgh).—The maximum draught of any battleship never exceeds more than about 30 feet. Any battleship would be quite safe in eight fathoms. The Dogger Bank presents no obstacles to any warship. It is simply called "Dogger Bank" because it happens to be shallower than the rest of the water round about it.

J. C. P. (London).—(1) See reference to neutral flag in article.

(2) A certain number of our merchant ships carry a gun or two aft for protection, but that is against armed liners. The chances of a merchantman detecting a submarine submerged are practically nil. The latest German plan appears to be to torpedo without warning.

(3) The *U21* has returned to Germany after her Irish Sea exploits, so there is no more to be said. She probably achieved it lashed alongside some vessel flying the neutral flag.

(5) The German battle cruisers returned to Heligoland by the north entrance instead of by the usual southern routes. A submarine is not ubiquitous, and I think you should remember before suggesting that our submarines are incompetent that if some time ago our battle cruisers managed to enter Heligoland Bight without being injured by German submarines acting in their own waters, it is only natural to assume that German warships under more favourable conditions should be able to maintain an equal immunity. It is true that the German battle cruisers had been knocked about, but the steaming capacity of all of them appears to have been unimpaired.

A. B. H. (West Hartlepool).—Unfortunately, your letter of December 24 has only just reached me. If the enemy had fired a hundred rounds they gave you a hundred shells. It is a matter of one round one shell. As regards the Germans having the range, they could work that out by chart without further knowledge, though I dare say that you, in common with the other towns visited, had some German fellow-townsmen who amplified the information.

Z. E. P.—Something such as you suggest was first mooted in the Crimean War, and has figured in "future war stories" since. Presuming it to be feasible, there would be an ample supply of volunteers without occasion to call on you. I am, however, asked to convey to you an appreciation of your offer.

N. H. (Wales), and O. G.—I have personally forwarded the matters to which you refer to the proper quarter. It seems to be highly significant.

THE VERTICAL BATTLE.

INFLUENCE OF AERIAL ATTACKS ON TRENCH WARFARE.

By L. BLIN DESBLEDS.

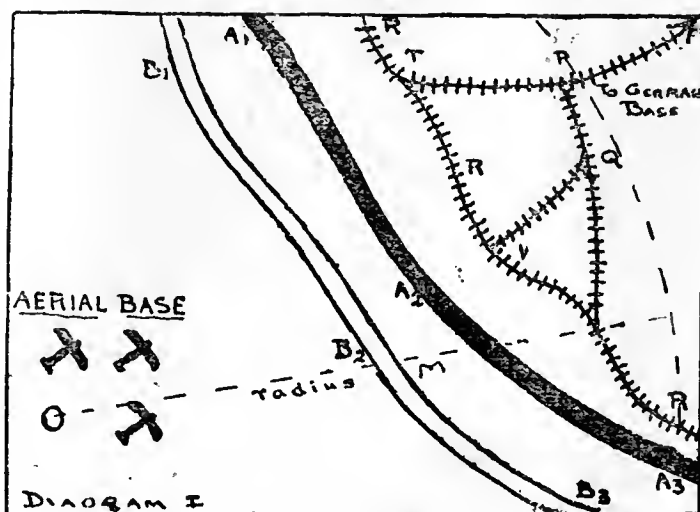
IN its last analysis, the meaning of the word "victory" is ability to force an opponent to accept the views of his victor upon terms, or conditions, imposed by the latter. In every-day life victories are won, many times a day, by an individual who imposes his will upon another, or by the operation of the law when it forces the inhabitants of a country to follow certain lines of conduct laid down by the legislator. Just as the greatest possible victory for the legislator would be the total absence of offenders against the laws he has laid down, so the greatest victory a commander could win would be the absence of the enemies he expects to encounter. Although this seems like enunciating an axiom which everybody knows, yet the necessity for the enunciation is not pleonastic, because for some there cannot be victory in the present war unless a great many of their enemies are exterminated, and for others a victory means a triumphant entry of the Allied troops into Berlin after hard-fought and bloody encounters. Again, victory to many means the destruction of the German fleet and the capture of the German colonies; whilst to others it means the abdication of the Kaiser and his imprisonment for life in a fortress or on a desert island. Final victory for the Allies may be accompanied by all these things, but, in essence, victory has nothing whatever to do with battles, or with the killing and maiming of a great number of the opponents, or with the sinking of their ships and sailors, or with the capture of their colonies, or with the imprisonment of their commanders. It may be necessary to take one, or more, or all of such actions in order to ensure the permanency of a victory. But, essentially, the modern view of victory is the ability to impose upon nations opposing us our notion of right or wrong, in their relations with other countries, in at least the same degree as it is imposed upon the inhabitants of our country in their intercourse with one another. It follows, therefore, that the more easily, and the more promptly, we can force upon our opponents the adoption of a code of international ethics, accept-

able to the Allies, and obtain the necessary guarantee that it will be kept by them, the greater will be our victory.

Without in the slightest degree criticising what has been done by our commanders, to whom the State has entrusted the task of carrying out the operations to enforce our views and those of our Allies, the writer desires to press home the point which he has already, on two occasions, brought forward in these columns, namely, that a strong, comprehensive, and sustained aerial offensive might result in a much earlier victory than would otherwise be the case.

AERIAL OFFENSIVE AND TRENCH WARFARE.

In its present stage the war is essentially one of trench work, at least as regards the Western field. In his articles Mr. Hilaire Belloc has made the character of this method of warfare very clear, even to the lay reader. The writer has,



therefore, no need to explain the state of affairs in France and in Belgium, with which the reader must be now perfectly familiar. In studying the drawings illustrating Mr. Belloc's articles the reader cannot have failed to notice that at many points on the Western front of operation the situation is somewhat as indicated in Diagram 1, which does not designate any particular portion of the confronting lines, but only the general state of conditions prevailing at a great number of points from the North Sea to Alsace. In the diagram, A, A, A, represents a portion of the German line, and B, B, B, the opposing portion of the line occupied by the Allies. Behind the portion of the German line under consideration there is a railway system with a branch, R, R, R, running almost parallel to it, and having nodal points at P, Q, S, T and V. This railway system cannot be destroyed by the ordinary means of attack, but would be exposed to an aerial offensive. There is possibly another railway system behind the line B, B, B, of the Allies, but which, for the purpose of our argument, need not be indicated in the diagram.

Now, let us suppose that the Allies had, at some point O, behind their line B, B, B, an aerial base O, from which their aircraft could carry out offensive operations within a circle of radius M containing the nodal points P, Q, S, T and V, and let us examine the effect of the destruction by means of aircraft of one or more of those nodal points on the enemy in the trenches along A, A, A.

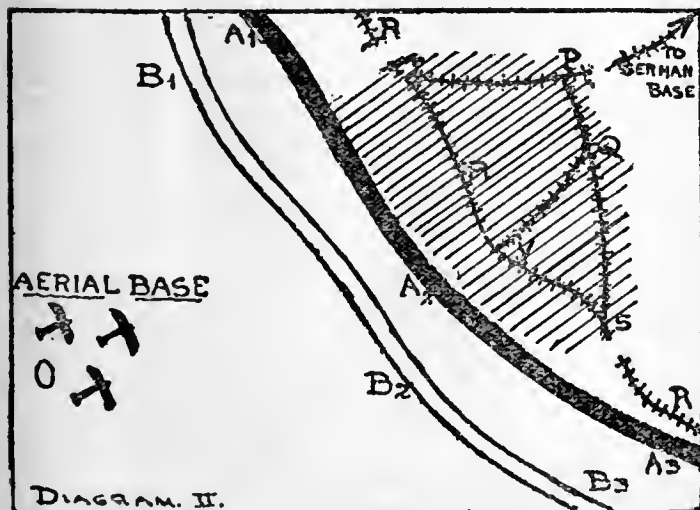
If our airmen succeeded in destroying the nodal point S, and did damage there of such magnitude as would require considerable time for repair, they would, during that time, deprive the enemy, on the right of S, of quick and direct railway communication with those in the trenches to the left of S, but the enemy could still send reinforcements and supplies by rail along the whole of the line we are examining. The same remarks apply to the nodal points V and T.

If it were the junction Q that was destroyed, rail communication between the enemy would be maintained along the line, but supplies during the time necessary for repair would only reach the troops in the portion of the trenches we are examining through the branch P, T. Supplies and reinforcements could, however, be sent from one portion of the line to another by means of the branch R, R, R. If our airmen succeeded in destroying the nodal point P the Germans in the trenches along A, A, A, would be prevented from direct railway communication with their base, but would still be able to transfer troops and supplies along the line R, R, R.

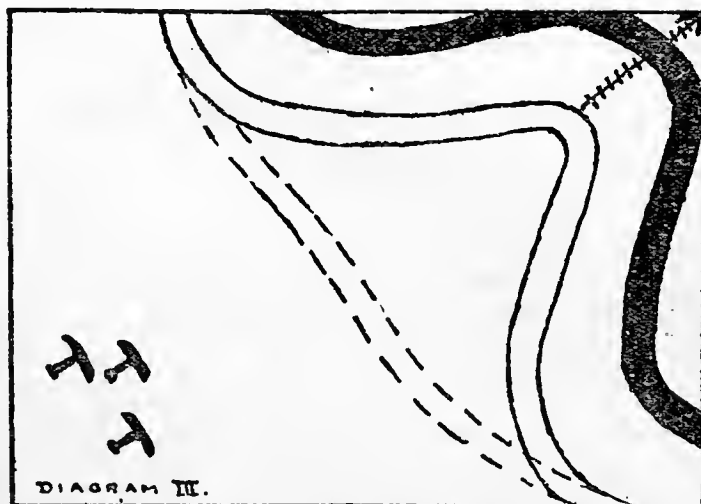
AERIAL ATTACK versus AERIAL RAID.

From the foregoing it will be gathered that the destruction of any single point of such a railway system as we have been considering would only lead to temporary difficulties and slight delay, but would not render the system entirely useless to the enemy in the trenches. As an aerial raid, considered merely as an offensive operation, could result in the destruction of only one point, the conclusion which is forced upon us is that *generally speaking, so far as their offensive value is concerned, aerial raids can only lead to local and temporary embarrassments, but cannot have a very great influence on the character of trench warfare.*

If, however, the nodal points P, T, and S were destroyed by a simultaneous and concerted aerial offensive, and the destruction were of such a character as to entail delay for



the necessary repair, then the German troops occupying the territory, shown by section lines in Diagram II., would be deprived of railway communication with both their base and their neighbours in the adjoining parts of the country. If considerable delay were necessary to repair the nodal points P, T, and S—and by considerable delay is meant one of only twenty-four hours—then it would be a relatively easy



matter for the Allies to force the surrender of the enemy occupying the trenches contained within the section-lined area. The result of such an aerial offensive would enable the Allies to occupy the ground previously held by the enemy in very much the same manner indicated in Diagram III., where the dotted lines represent the position occupied by the Allies previous to the assumed successful aerial offensive, and the full lines their position after such an offensive. The German position would then be somewhat as that indicated, in the same diagram, by means of a continuous thick dark line.

It will thus be seen that if an aerial offensive were made with success at various points along the whole line of the German trenches the result would be the driving of a number of powerful wedges into the enemy's line, which would be bound to break at some point. A successful aerial offensive, however, at any one place depends, as we have seen, upon the simultaneous destruction of several vital nodal points. The failure to succeed at any one point may mean the failure of the whole aerial offensive. Hence, *in order to ensure the success of an aerial offensive at any place the various vital points must be subjected to a simultaneous attack in force and not simply raided.*

THE N-SQUARE LAW.

The success of an aerial attack depends, to a great degree, upon a law which is well-known to military and naval strategists, and which applies with equal strength to aerial warfare. That law is known as the "*n-square law*," because it shows that the fighting strength of any force, whether on land, on the sea, or in the air, varies as the square of its numerical strength. The following explanation, although not a mathematical proof, will help the reader to grasp the meaning of that law so far as it applies to bomb-dropping from aeroplanes.

Everything being equal, two aeroplanes can carry twice as many bombs as a single machine. If the bombs from one machine were dropped until there were none left, and then all the bombs were gradually dropped from the second machine, then the fighting strength of the two machines would be twice that of a single one. If, however, the two aeroplanes dropped their bombs simultaneously, they would do the same damage in half the time, or twice as much damage in the same time. Hence the fighting strength of two aeroplanes acting simultaneously is twice as great as it would be if the machines were acting at different times. It follows, therefore, that the fighting strength of two aircraft acting simultaneously is four times the fighting strength of a single one, that is, if we double the number of machines in an air squadron, the fighting value of the squadron becomes 2^2 times as great. In the same way, if we treble the number of machines of an aerial fleet, its fighting value becomes 3^2 , or 9, times as great. The importance of the number of aircraft sent out on an offensive, and likely to be engaged in a vertical battle, is thus made evident.

P.S.—The writer would be much obliged if all firms capable of manufacturing any aeroplane parts, whether in large or small quantities, would communicate with him without delay. In view of possible developments of great importance the writer wishes to get into touch with all those who are in a position to undertake the manufacture, according to drawings and specifications, of simple aeroplane parts, either of wood or metal.

One of the most noteworthy books of this present year is Mr. J. Mills Whitlam's *Starveacre* (Methuen and Co., 6s.), which, dealing with the tragedy of a country village, makes fine drama out of very simple elements. The figure of Raikes, the farmer, dominates the book, and this man's character is delineated with such ruthless insight as reminds us of Hardy at his best; not that Raikes is the only good portrait, for there are others equally convincing, and the "chorus," racy of the soil, is also well drawn. A strong, well-written book this, the best its author has yet produced.

ON TRENCHES AND TRENCH WORK.

A NOVEL FORM OF TRENCH DREDGER FOR DRAINAGE.

By COL. F. N. MAUDE, C.B. (late R.E.).

IT is interesting to notice how the trenches in Flanders and everything connected with them are gradually working their way through a cycle of change back to the types of thirty years ago.

We began the campaign with ideas taken from the conditions of the South African campaign, and as it happened the Germans also had closely copied our types. Generally, they were all cut exceedingly steep and narrow, with the parapets kept down as low as possible, so as to afford the smallest possible target to the enemy's artillery, and as long as the ground was suitable and the weather dry, they answered their purpose sufficiently well—that is, giving good cover to the men from the splinters thrown backward by high explosive shells.

Moreover, as they had generally to be laid out in the dark, no one could be certain where their prolongations might rest when daylight came; hence the numerous traverses we were accustomed to make in South Africa came in handy.

But it is open to question whether they saved us as much as we thought they did, for almost from the first the Germans took to locating them by aeroplanes from above, and clearly the broader belt of freshly-turned earth made when the excavated soil was thrown out to form parapets, both to the front and rear, was far more easily visible from above than the parapet in front, and the trench only, would have been.

If, for instance, a "Taube" could detect the broader line at, say, 5,000 ft., it would have had to come down to 3,000 ft. to see the smaller mark, and its risks would have increased in almost a double ratio as the height diminished. But a Taube which found and signalled the range would cost us far more in men than we hoped to save through the protection afforded by the parapet at the back.

The superiority of the German siege artillery on the Aisne, and at first in Flanders, simply compelled us to fight our way in so close to the enemy that he could no longer use artillery fire, least of all big, high explosive shells, for fear of hitting his own trenches, and thus we came back to a condition of affairs in which the inconspicuousness of the front parapet hardly mattered. At fifty yards you can see a 12 in. parapet just as well as a 3 ft. one.

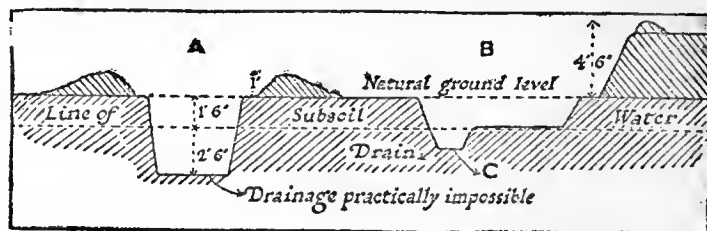
We did not exactly tumble to this obvious point for the first few weeks, and meanwhile the rains descended and the floods came, and the steep-sided trenches collapsed; the subsoil water rose up through the bottom, and I imagine both our men and the Germans have had about as hard a time during the last few months as has ever been recorded in history.

to me as quite a new idea the phrase I so often heard from my old Crimean instructors, "Men don't mind so much the *chance* of being killed; what they cannot endure is the *certainly* of having to stand knee-deep in slush and ice." And judging from photographs I have seen, we are rapidly coming back to the old Crimean type of trench, viz., one that is broad enough for convenience of movement, and sloped sufficiently for men to attack out of it; for the power of counter-attack is the most vital feature of all to be preserved for the sake of the moral of the troops.

Nor is there sufficient reason why we should cling to a flat target any longer now that the artillery superiority has passed so markedly over to our side. We now not only outnumber our enemy in guns of all calibres, siege and field, but we have unlimited ammunition behind us, and can employ a system of silencing his guns whenever they appear, to which want of ammunition precludes his making any adequate reply. Further than this, the skill of our gunners has been proved to be superior to anything he can bring against us, and our shells burst with certainty, where 20 per cent. (I have even heard of 30 per cent.) of his projectiles never burst at all.

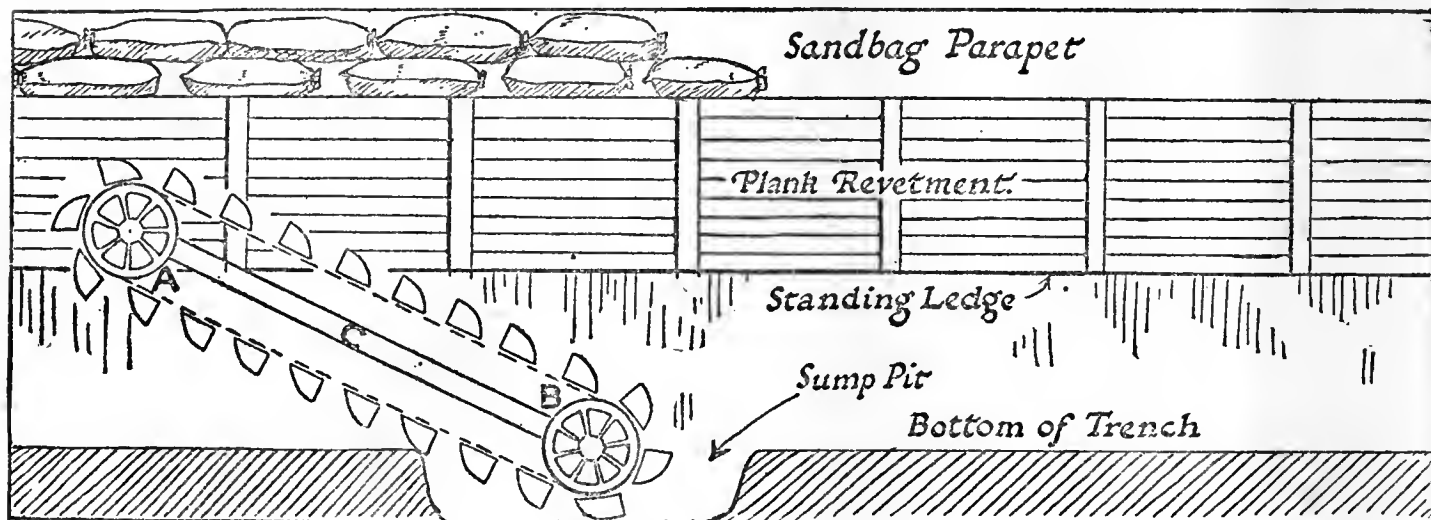
We can therefore afford to go in for a higher parapet, which not only gives us the advantage of command at short ranges—which is as important now as it ever was—but we can also diminish the difficulties of drainage to a minimum, the most important point for many weeks to come.

The sketch will make this clearer.



In section A, as fast as you bale out the water it filters back again. In B you can just keep it under.

Further, all kinds of rough but effective appliances for lifting the water out of B can be employed. The water can be allowed to settle in sumps (C) and then pumped out; but pumps soon clog in muddy water, and the simplest and most practical apparatus I know of is an application of the ordinary dredger type, which can be easily improvised out of the



Moreover, at these very short distances apart, attacks and counter-attacks became almost nightly occurrences, and then it was clearly apparent that these deep, unstepped trenches were veritable man-traps if the enemy charged home. Troops could neither spring out of them to charge or escape from them to run away; in fact, they had no chance at all of putting up a fight for their lives, and the consequences have on several occasions been pretty disastrous on both sides.

It is, however, the rain which is responsible for the general trend of opinion in favour of more rational ideas. Men returning from the front have again and again repeated

materials usually to be found in village smithies' and wheelwrights' shops. It consists of a number of buckets shaped like a coal-scuttle, attached to an endless belt rotating over two drums (A B), held apart by a straining piece (C), and mounted on any convenient platform of sleepers, or similar, timbering. A man turns the handle at A, and the contents of the buckets as they tip pour out into a trough which leads them clear out of the trench on the side away from the enemy. The sump pit can be made a continuous drain, and the whole apparatus moved backwards and forwards to prevent too large an accumulation of mud piling up at the rear of the trench.

CORRESPONDENCE.

FINANCIAL PRESSURE.

To the Editor of LAND AND WATER.

DEAR SIR,—Mr. Belloc, in his interesting article "Financial Pressure and War," published in your issue of February 6, shows that, from a financial standpoint, increasing stringency can only diminish the capacity of a country to carry on war in so far as it may affect the import of goods from foreign countries.

It may be reasonably assumed, therefore, that it would be good policy for a country situated as Germany now is to import either solely, or in as great a proportion of the whole as possible, those items mentioned by Mr. Belloc as being vital for the prosecution of hostilities, such as horses, petrol, rubber, and certain metals (chiefly copper); in other words, that the less Germany imports of those commodities which can possibly be dispensed with the greater her financial capacity for the purchase of the vital elements.

Now, Mr. Belloc postulates that although Germany does not produce internally sufficient food stuffs for comfort, yet, by exercising great care, the nation can manage to exist without the shortage in any way affecting her capacity for war.

It would seem, therefore (paradoxically enough), that should Great Britain decide to include food stuffs as contraband, the action would actually assist our enemies by rendering it financially possible to procure the vital elements for a longer time—thus prolonging the period of resistance.

Of course, this line of argument does not take into account the effect of a shortage of food on the comfort of the individual, and so on the moral of the nation as a whole, which might far outweigh the financial gain; but from a logical standpoint it seems difficult to refute.—Yours faithfully,

J. H. CLOSE.

"Rowsley," Rosebery Road, Cheam.

AN EASILY MADE EAR-PLUG FOR SOLDIERS IN THE FIRING LINE.

To the Editor of LAND AND WATER.

DEAR SIR,—So many soldiers are suffering from the effect on their ears of the awful noise of the battlefields that it might be of use to them to know of the most effective way of keeping out the concussion. Years ago as a Volunteer I suffered greatly in this respect, made many experiments, and found the following beyond all comparison the best.

Take a little piece of muslin, scrape off into it some of the wax of a candle, fold it up into a little pill the size of the ear opening, tie it round close above the pill with some thin thread, leaving tags about three inches long; cut off the spare muslin, and that is all. The resulting plug, which looks like a miniature grenade, can be pushed into the ear at any time, fits itself accurately, owing to the warmth of the body keeping it just neither hard nor soft, and it can be pulled out again readily by the tags of the thread. Holding it near a fire will soften the wax enough to be easily moulded to the proper size.

Wool as ordinarily used is of no value at all, any hard plug tends to injure the ear, while the little candle-wax grenade fits perfectly and yet is absolutely harmless. One can be made in five minutes; though, of course, a little adjustment in the amount of wax used is needed to get a perfect fit.

Should anyone care to ask me I shall be happy to send a sample to them at any time.—Believe me, etc.,

OLDFIELD THOMAS.

15, St. Petersburg Place, Bayswater, W.

THE FIRST LORD.

To the Editor of LAND AND WATER.

SIR,—I do not think the "Man in the Street" objects either to Lord Fisher or Admiral Jellicoe; certainly not to the latter. But they do object to a civilian using autocratic power at the Admiralty which the folly of Parliament has given him.

The "Man in the Street" holds Mr. Churchill responsible for the *Cressy* disaster, the three cruisers being sent in defiance of naval opinion.

For the Pacific defeat in sending Admiral Cradock with an inferior force to attack a superior.

For the Antwerp expedition of untrained men.

For the mystery of the *Goeben* at Messina.

They also object to the First Lord of the Admiralty deserting his post at Whitehall for the trenches at Antwerp.

They are also aware of his treatment of Sir George Callaghan, and feel the anchoring of the Niger gunboat off Dover, and the *Formidable* disaster is probably owing to his defiance of naval advice and in his belief that he is a second Nelson.

A COAST-DWELLER IN CORNWALL.

THE AGE QUESTION.

To the Editor of LAND AND WATER.

DEAR SIR,—Could you see your way to give in one of your future issues of LAND AND WATER some notes on the qualifications of naval officers? It seems at present that the entry to this service must be determined before the age of 13, and after that age a boy desiring to enter the service is barred. Surely a lad having a good education should have an opportunity of entering at least as late as 16. I am concerned, because I have a boy aged 14 anxious to enter the Navy, and find he is too late. I do not know if this is within the scope of your paper, but if it is I should be obliged by a note in your correspondence columns.—Yours faithfully,

NAUTICUS.

CATCHING SUBMARINES.

To the Editor of LAND AND WATER.

DEAR SIR,—One of your correspondents mentioned the efficacy of an ordinary fishing net for catching and disabling submarines. I have been told that Messrs. Brunton Bros., of 17, St. Stephen's House, Westminster, have already devised a scheme which has been probably shown to the Admiralty. The scheme consists in attaching a net to the tail of a torpedo (not charged), and on a ship sighting a submarine the torpedo is launched across the bows of the latter, the net trails out behind, and unless the submarine sees and evades it, disaster is the result. I believe that this has been tried experimentally.—Yours faithfully,

MAURICE A. WOOD.

Cecil Chambers, 86, Strand, London, W.C.

EARLY SUBMARINES.

To the Editor of LAND AND WATER.

SIR,—Mr. Grimshaw's letter in a recent issue has proved interesting to many readers, no doubt; to myself particularly so.

In 1884 a submarine boat was designed by Mr. J. Waddington, and built at Birkenhead by Messrs. Cochranes, of that city. This vessel was approximately 40 feet long and 6 feet greatest diameter, tapering to a point at each end. The rudder was fixed under the boat, and diving fins or planes were fitted. A conning-tower and pumps for altering the displacement were a part of the equipment. Propulsion was effected by one 20-h.p. electric motor, made by Messrs. Siemens, driven by a battery of accumulators supplied by the Electric Power Storage Co., the whole electric installation being fitted by the writer and his partner, Mr. F. H. Perry. The battery, which weighed over five tons, had to be charged from an external source.

The electric power was guaranteed by us to drive the boat at 8 miles p.h. upon the surface, which was easily accomplished. In all the chief features it will be seen this ship was a prototype of the present-day under-water ship. The designer had hopes of interesting the British Admiralty in the idea, but without success, and I believe eventually lost all the money spent on the work. Of course, the boat was never properly fitted for diving, but Mr. Waddington's belief was that, having shown the invention so far advanced, further assistance, both financially and mechanically, would have been available to complete a practicable submarine.

The first trials took place at the end of 1884 in the great float at Birkenhead. When everything was in place, three men, including myself, went inside, and the conning-tower hatch was then bolted from the inside, the tanks then filled, and the boat, attached by chains from a crane at the dock side, was lowered to the bottom. Communication being established by telephone with those above, it may be imagined the stay below was not very prolonged, just sufficient to show everything was tight. Afterwards the boat was driven at various speeds, and performed evolutions upon the surface which certainly were most wonderful at that time. The hull was almost entirely submerged at times; in fact, two of those on board were heartily glad when the trial was over. The nose of the boat was a solid steel piece about three feet long, and in making a sharp turn at full speed we just missed running into the s.s. *Alaska*, which would have meant our going down like a stone and the big steamship being sunk, as she was lying up for repairs.

Although the submarine of to-day is marvellous in its perfection, the same risks exist, added to many others; and I take off my hat to the crew of any submarine.—Yours truly,

CHAS. W. COX.

THE INDIAN TROOPS.

To the Editor of LAND AND WATER.

SIR,—I am encouraged by the generous response of the public to the appeals for supplying the King's Indian troops in France with "comforts," which are practically necessities, to draw attention to the urgent requests that I have received for "waterproof hoods" to protect the puggarees (turbans) of the men from getting soaked by rain and snow. The demand comes from so many quarters that I fear the few I am able to send will meet but the barest fraction of the need.

In addition to pants, vests, socks, gloves and similar garments, which wear out quickly and require constant renewal, there is a general request for condensed milk, brown sugar, cigarettes, sugar candy (for non-smoking castes like the Sikhs), spices, etc.

With the balance of the money standing to the credit of "The Indian Troops Comforts Account," with Messrs. H. S. King and Co., 9, Pall Mall, S.W., I shall, so far as it will reach, endeavour to comply with these requests.—Yours faithfully,

AMEER ALI.

2, Cadogan Place, London, S.W.

MR. H. J. C. GRIERSON AND EXPLOSIVES.

To the Editor of LAND AND WATER.

DEAR SIR,—Are our explosives so ineffective as Mr. Grierson would suggest? The *Hela* when torpedoed on September 16 by submarine *E9* was reported to have sunk in under half an hour.

According to a letter of an officer on the *Inflexible* (the *Times*, January 20) one of the German officers said that one turret had been blown bodily overboard by a 12in. shell. I do not know what a 6in. turret weighs, though I have seen them under construction, and it strikes me that it must be a monstrous explosion which would move one, let alone blow it overboard.

Is it fair to compare the battles of Coronel and Falkland Islands? It is reported that the *Good Hope* and the *Monmouth* closed with the German ships so as to bring their lighter guns within range. In the Falkland Islands battle it appears to have been a stern chase according to Jane's description of the fight.

The *Good Hope* was laid down 1897 and the *Monmouth* 1899. The *Scharnhorst* and the *Gneisenau* 1904 and 1905.

Armour is improved every year, guns, too, so that the two older boats were outclassed in every way to a greater extent (judging from *Fighting Ships*) than the latter were in the Falkland Battle.

The "Fire Question" is also answered in the *Times* letter of the 20th inst.

Are not we English a bit too ready to condemn English production and to belaud that of the foreigner? Wouldn't it be as well to follow Mr. Jane's and Lord Beresford's advice and trust the Admiralty?—Yours faithfully,

ERNEST HILLARY.

The Hawthorns,
Tanshelf, Pontefract.

P.S.—Will you allow me to add that your journal gives me the greatest satisfaction to read of anything I have found. Everything else, newspapers and periodicals alike, appear either openly or suggestively to be governed by politics.

BOOKS FOR CAMPS AND TRENCHES.

To the Editor of LAND AND WATER.

DEAR SIR,—It would be very kind of you if you would draw the attention of your many readers to the Camps Library. This Library was started by Sir Edward Ward with the object of preventing overlapping by forming a central depot to which the public could send all books (old and new) intended for the use of our soldiers at home and abroad. He also wished to create a distributing organisation from which all camps and recreation rooms could obtain books and magazines.

The Library has, I think, justified its existence, as during the last two months it has not only formed lending libraries of over 30,000 volumes in the various camps and recreation rooms throughout the United Kingdom, but has also sent thousands of books and magazines to all the regiments serving abroad, as well as to the various convalescent camps and to all the field ambulances.

We have special facilities for transit, and there is little delay in getting the books to their destination.

Thanks to the splendid generosity of the public large boxes and packets of books arrive here daily, for in these grave yet great days everybody loves to give. As someone sending books writes this morning, "For the men in the

trenches, from a grateful woman, who appreciates her quiet home more than ever. She has two dear boys at the front, and she only wishes she had more books to send."

We want more and more books, for the demand made upon us by camp and trench is immense.

We should also like to make the Library known as widely as possible among the various camps and recreation rooms who need books. Sir Edward Ward's idea is that each camp should form its own lending library, and work it for itself with its own rules and regulations. We charge a small fee (to pay for packing, etc.) for books sent to the camps, which then become the entire property of the regiment acquiring them.

We are here to help and to help other people to help.

Books should be sent (carriage paid) to the Camps Library, 22, Earl Street, Westminster, and small donations towards expenses we should so like to get.—Yours faithfully,

EVA ANSTRUTHER (Hon. Sec.).

22, Earl Street, Westminster, London, S.W.

CRITICISING THE ADMIRALTY.

To the Editor of LAND AND WATER.

DEAR SIR,—In response to Mr. Jane's comments, remarks, and invitation in current issue, I desire to say that I am unable to work up any enthusiasm for either "lunatic asylums" or the "grinding of axes"; also that I and very many others consider the withholding of frank criticism of our Admiralty and other departments is harmful in the extreme; also that the repeated successful demonstrations by the enemy on our East Coast have created a distinct feeling of uneasiness and insecurity. And, finally, that the main point of my letter to Mr. Jane has not even been touched, far less disposed of, in spite of his knowledge of "the inside and unwritten history (or policy) of the naval war."—Yours truly,

E. H.

Hatch End.

[There is no "withholding" of criticism. The Admiralty has made no important error to date, however matters may appear to amateur critics of them. There are, I think, still people who believe the moon to be made of green cheese, and that the earth is flat. But they have given up demanding "frank criticism" of astronomers and geographers who believe otherwise. For the rest we are fighting to beat Germany—not to create a feeling of ease and security in the civil population.—FRED T. JANE.]

RULES REGARDING CORRESPONDENCE FOR PRISONERS OF WAR.

1. Letters, postcards, and postal parcels should be addressed as follows:—

(Name, initials, rank and regiment),
British Prisoner of War,
in Germany (or Austria-Hungary),
c/o General Post Office,
Mount Pleasant, London.

When the place where the prisoner is confined is known, the words, "At _____," should be inserted at the beginning of the third line of the address. It is recommended that parcels should not be sent unless the place of confinement is known.

2. Communications should be limited to private and family news and to necessary business communications, and should not be sent too frequently.

No references to the naval, military, or political situation, or to naval and military movements and organisations, are allowed. Letters or postcards containing such references will not be delivered.

3. Friends of prisoners of war are advised to send postcards in preference to letters, as postcards are less likely to be delayed. If letters are sent they should not exceed in length two sides of a sheet of notepaper and should contain nothing but the sheet of notepaper. Letters and postcards may be written in English (though letters in German are probably delivered more quickly). On no account should the writing be crossed.

4. Letters cannot for the present be accepted for registration.

5. Postage need not be paid either on letters or parcels addressed to British prisoners of war.

6. No letters should be enclosed in parcels, and newspapers must not on any account be sent. So far as is known there is no other restriction on the contents of parcels; tobacco may be sent, and will be admitted duty free, but foodstuffs of a perishable character should not be sent.

7. Remittances can be made by money order to British prisoners of war. No charge is made for commission. Instructions as to how to proceed can be obtained from post offices. The transmission of coin, either in letters or parcels, is expressly prohibited. Postal orders and bank notes should not be sent.

8. Postal parcels will be insured without charge.

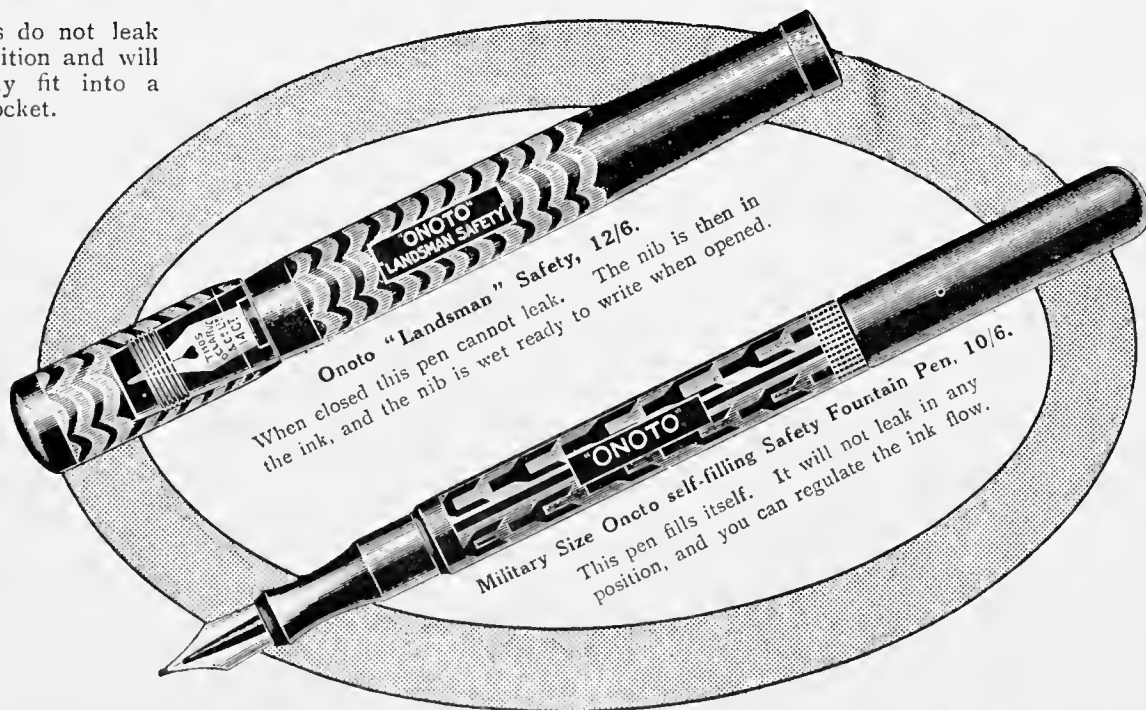
9. It must be understood that no guarantee of the delivery of either parcels or letters can be given, and that the War Office accepts no responsibility. In any case considerable delay may take place, and failure to receive an acknowledgment should not necessarily be taken as an indication that letters and parcels sent have not been delivered.

10. So far as is known, prisoners of war in Germany are allowed to write letters or postcards from time to time; but they may not always have facilities for doing so, and the fact that no communication is received from them need not give rise to anxiety.

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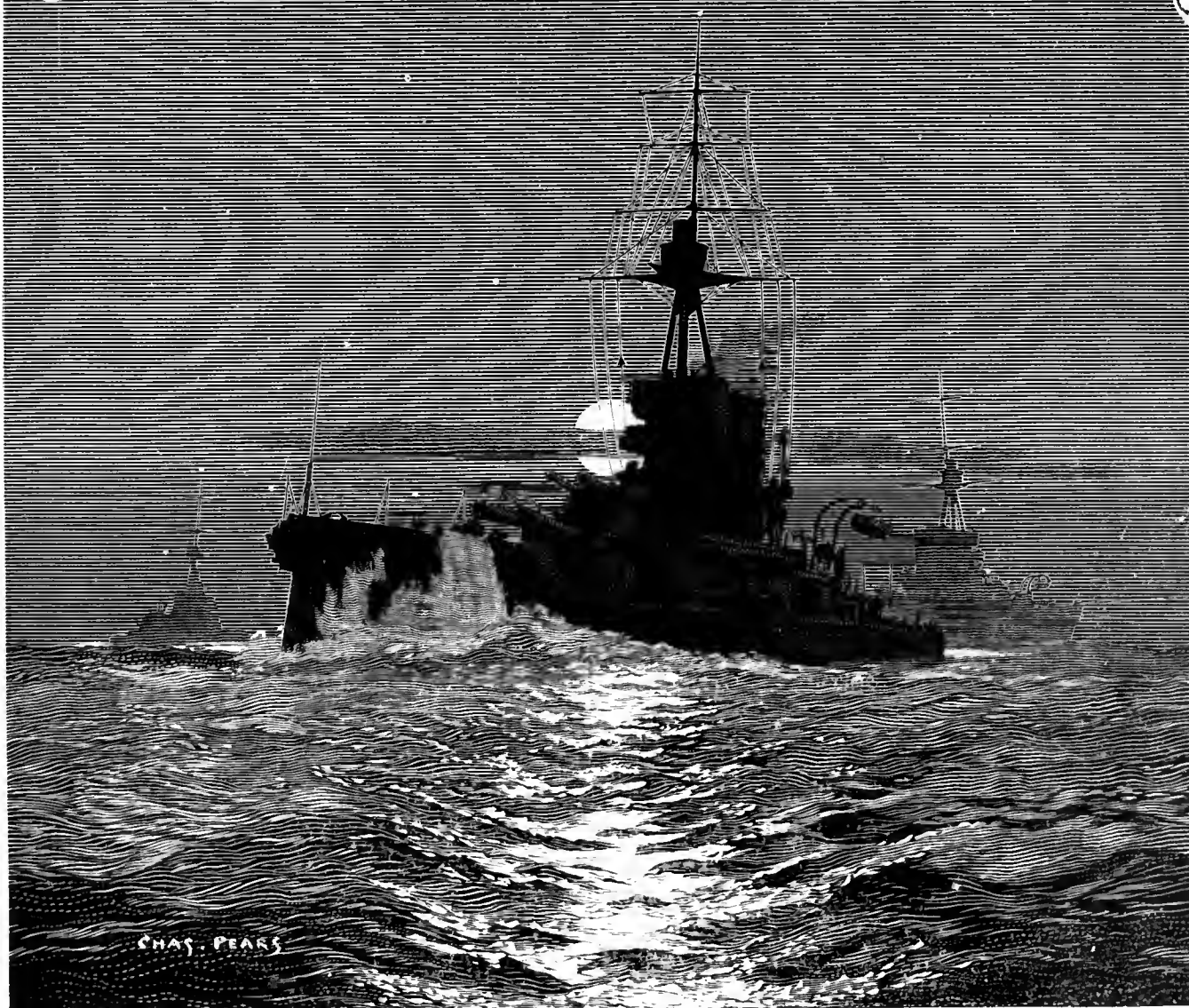
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HOW NAVAL GUNS ARE AIMED

By SIDNEY GRAVES KOON

THE marvellous accuracy of our naval gunners has been time and again a cause for self-congratulation on the part of those of us who never saw a naval gun fired. But how many of us know the intricate process by which that success is achieved? How many know the complex relations that exist between the enemy's speed, his distance from our gun, the weight of our shell, the velocity with which it leaves the muzzle, the rolling of our ship as it tears through the heaving billows? The certainty that, sooner or later, a dreadnought action must take place in European waters lends point to a brief study of this subject.

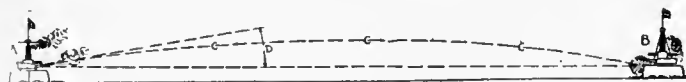


FIG. 1.

When a battleship *A*, Fig. 1, fires a shell at a hostile ship *B*, that shell takes a curved path *C-C-C*, called its "trajectory." If the gun is properly aimed the shell lands on the target, explodes with a horrid noise, spreads destruction round about, and sometimes sets fire to the ship *B*. If the ships are very close together, as was often the case a century ago, the path of the shell may be practically a straight line, like that shown below the trajectory. Unfortunately for this ideal condition of shooting, however, the attraction of gravitation acts so persistently upon the shell in its flight that the gun has to be aimed well above the point to be hit, under penalty of falling far short and burying the shell harmlessly in an inoffensive ocean. So the shell starts on a course such as that of the upper straight line, from which it is gradually pulled farther and farther down as it wings its flight across the miles of water between its gun and the enemy's ship. The angle *D* between the straight line above the trajectory and that below it is called the "angle of elevation" of the gun. The distance between gun and target is the "range." And it is the correct determination of this range which is the most difficult part of accurate naval gunnery. The greater the range the greater must be the angle of elevation; the lighter the shell the greater the elevation for a given range; the greater the velocity with which the shell starts its journey the smaller may be the angle of elevation and, consequently, the flatter will the trajectory be.

But there is another important element, and that is the location of the exact target from right to left. If it be desired to hit the enemy's mast and the shell actually hits something a hundred feet away on either side that is not good gunnery. So we have the two things to look out for—the gun's elevation to correspond with the exact range and its "traverse" to correspond with the location "sideways" of the point to be hit. The range is determined simultaneously from several positions on the ship, of which one may be *K* in Fig. 2. The method will be described later.

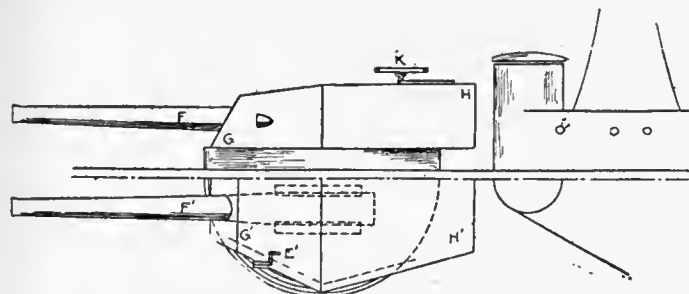


FIG. 2.

The traverse is in many cases adjusted by an officer in a narrow place in the turret *G H*. This is the man who fires the gun. He stands between the gun *F'* and the armoured wall of the turret, and looks at the enemy through the peculiar-shaped telescope *E'*. What he sees is indicated in Fig. 3, where the "cross-hairs" of his telescope are shown to be on the forward funnel of the hostile ship. The axis of this telescope is very accurately parallel to the horizontal axis of the gun. And the telescope pierces the heavy armour of the turret in the manner shown in order to avoid having a small shot or piece of shell come right through into the turret if it should chance to land just where the telescope is.

If, now, our shell could cover instantaneously the distance to the enemy, a shell fired from this turret, with the correct elevation, would strike the forward funnel. But it takes a modern shell 16 seconds to travel the six miles now considered a moderate battle range. During 16 seconds the enemy, if steaming at 20 knots speed, would have moved ahead 540 feet. Consequently the shell would strike 540 feet behind



FIG. 3.

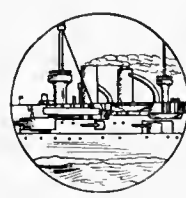


FIG. 6.

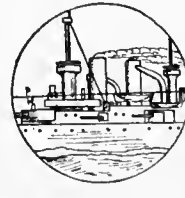


FIG. 7.

the point at which it was aimed, or perhaps 200 feet behind the stern of the target ship. So we see that, just as in shooting at a wild duck on the wing, we have to estimate the enemy's speed and anticipate him—in this case by 540 feet.

Now to get the range. Several instruments are in use for this purpose, all based upon a simple principle of trigonometry. If we know the angle *L* of a right-angled triangle, Fig. 4, and know the side *M* opposite that angle,

FIG. 4.



then the side *N* can be readily computed. In this case *M* is the distance between centres of the mirrors *P* and *P'* in the instrument, Fig. 5, while *N* is the range sought. The

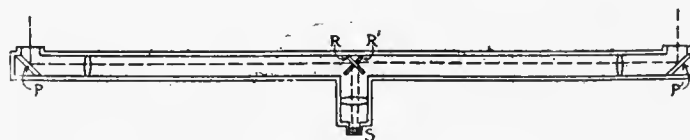


FIG. 5.

side *M* is known to the thousandth part of an inch. So it remains to measure the angle and thus determine the range. The mirror *P* is fixed at exactly 45° to the axis of the tube *PP'*. A ray of light, entering the instrument at *P* and reflected to the mirror *R*, is again reflected into the eyepiece *S*, where it forms the lower half of the image in Figs. 6 and 7. Similarly, a ray of light, entering at *P'* and reflected to *R'* and thence into the eyepiece, forms the upper half of the image. The mirror *P'* (or sometimes *R'* instead) is adjustable. The amount of movement of that mirror necessary in bringing the two halves of the image in Fig. 6 into correct mutual position, as shown in Fig. 7, may be measured to the fraction of a minute of arc. And this measure, shown on an ivory scale, tells the officer using the "telemeter"—or "stadimeter," as it is variously called—just how far away his target is.

The arc of movement of the mirror is almost inappreciably small. With a 6-foot "base line" *PP'*, an angle of 40 seconds of arc (one ninetieth of one degree) represents a range of 10,300 yards, or about six miles. An angle of 30 seconds shows the range to be 13,750 yards. As an angle of 29 seconds indicates 14,225 yards it is evident that an error so small as one second of arc (the thirty-six-hundredth part of one degree) will produce, in estimating this 8-mile range, an error of 475 yards, or a quarter of a mile. To correct such errors, and at the same time those variations due to the action of atmospheric conditions upon the powder used and upon the refraction of rays of light passing over long distances at sea, "spotters" are employed. Men with powerful glasses, stationed in elevated positions from which they can watch the fall of shells in the water, verify or correct the range as determined by stadimeter and telephone their observations to the ordnance officer below. In this way it takes only a few shots to locate the exact range required, after which hitting the enemy is a mere matter of the precision with which these various elements may be continued in their several combinations.

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LIEUT. E. G.

Scuternhay, Exeter.

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THE TORPEDO

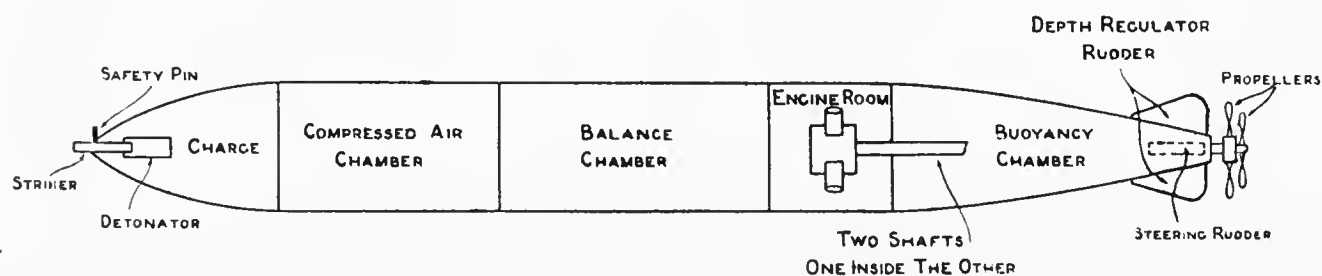
By "A.M.I.C.E."

THE torpedo is to-day one of the principal arms of naval warfare, and is carried in practically every type of warship from the submarine to the largest battleship. Although this has been the case for several years it can safely be said that the introduction of the submarine greatly increased the importance of the torpedo as an offensive arm.

The modern torpedo may be looked upon as a small submarine vessel without conning tower and periscope,

the intruding water causes the appearance of flames and smoke so as to indicate the spot where the torpedo has struck.

The compressed air chamber consists of steel walls having a thickness of about a quarter of an inch, and has a capacity of about 12 cubic feet. It is capable of withstanding a pressure of about 2,000 lb. to the square inch, although the actual working pressure is 1,470 lb. per square inch. This pressure is reduced by means of a reducing valve to 515 lb. per square inch, at which pressure it supplies power



DIACRAMMATIC SKETCH OF A TORPEDO.

capable of travelling at a very high speed under water, and carrying a charge of gun-cotton which explodes on striking an object.

The torpedo was invented by Commander Luppis, an officer in the Austrian Navy, who sold his patent to Whitehead, an English engineer engaged in the well-known naval works in Fiume. Practically every navy throughout the world uses the Whitehead torpedo except that of Germany, which employs the Schwartzkopf type. In France some torpedoes are made by Creusot, and in America by the Bliss-Leavitt Company. There is, however, very little essential difference between the various torpedoes.

A torpedo looks very much like a steel cigar, and varies in length from 14 feet to 19 feet and in diameter from 16 inches to 21 inches. There are six main parts in a torpedo, and, beginning from the nose, they are as follows: (a) the head, (b) the chamber containing the compressed air, (c) the balance chamber, (d) the engine room, (e) the buoyancy chamber, and (f) the tail end.

In the nose it carries a small thin steel rod which ends in the detonator. When the torpedo hits an object the steel pin is forced violently inwards and fires the detonating mixture, consisting generally of fulminate of mercury, which in turn fires the main charge, consisting of about 200 lb. of wet gun-cotton.

In order that this great charge is not fired accidentally a small safety pin is provided in the nose, and until this is withdrawn the detonator cannot operate. Other safety appliances are also provided, such as a small safety fan, which is spun round by the water, and must revolve a certain number of times, representing a certain distance travelled, before the steel rod is free to move. It is, of course, important that the crew should see that these safety devices are removed before firing the torpedo, and it is, of course, a very easy thing, especially in the excitement of an engagement, to forget to withdraw the safety pin. In such a case the torpedo would be quite harmless when striking an object. Thus several torpedoes were found during the Russo-Japanese War which had not exploded, though they had struck the steel netting protecting battleships against torpedo attacks.

For practising torpedo firing in times of peace the torpedo is fitted with a dummy head made of thin copper and filled with water, so that the weight is equal to that of the "war-head." When the head is destroyed by striking an obstacle

to the engine. If the air were carried direct from the reservoir to the engine the energy stored would be expended in a very short time, while the speed of the engine would rapidly decrease.

The balance chamber contains the mechanism for regulating the depth under water at which the torpedo is adjusted to run. In the engine room is placed the compressed air engine for driving the propellers. The engine is generally of the three-cylinder type and has an indicated horse-power of about 60. In the American Bliss-Leavitt torpedo a compressed air turbine of the Curtis type is employed.

The buoyancy chamber provides the buoyancy of the torpedo, so that when a torpedo has exploded its charge it can come to the surface and be picked out of the water. It also contains the gyroscope, which is an instrument for automatically correcting the course of the torpedo for any deflection which it may experience.

As the torpedo leaves the tube a bolt in the latter catches a trigger on the former, and this releases a spring which starts the gyroscope. In case the torpedo swerves in the water the position of the gyroscope relative to the torpedo alters, thus putting into operation compressed air valves which direct the steering rudder in such a way as to correct the deviation. A torpedo, in fact, rushes through the water along a zigzag path about two feet broad. The great accuracy of modern torpedo firing is largely due to the introduction of the gyroscope. The tail section carries the two screw propellers and the horizontal and vertical rudders, each worked by a small auxiliary air engine supplied with compressed air from the main reservoir, but entirely independent of the main engine.

The auxiliary motor controls the horizontal rudder automatically by means of the balancing mechanism, and thus ensures a constant depth of immersion, while the motor working the vertical rudder is controlled by the gyroscope. The latest type 18-inch Whitehead torpedo contains a charge of about 200 lb. of wet gun-cotton, and maintains a speed of 43 knots for 1,000 yards, 32 knots for 3,000 yards, and 28 knots for 4,000 yards. The 21-inch Whitehead torpedo carries a charge of 300 lb. of gun-cotton, weighs nearly 2,000 lb., and has an effective range of some 7,000 yards. A curve is given showing the range and speed. The great increase in range of the torpedo during the last few years is chiefly due to the

(Continued on page 298)



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THE WAR BY LAND.

By HILAIRE BELLOC.

THE new interest which has arisen not unexpectedly, but with great rapidity in the present week is the German strategic counter-offensive, which has at last been undertaken in the eastern field. It is the only great interest (by land) up to this moment (Tuesday evening) and it merits particular atten-

tion. That interest alone will fill this week the great bulk of these notes, reserving for next week a discussion of those doubtful elements on which may be based an estimate as to the duration of the war.

This new German counter-offensive in the East has various aspects, general and particular, with which I propose to deal in turn.



THE GENERAL MEANING OF THE MOVEMENT.

I.

The new counter-offensive taking place as it does upon both wings of the enemy's lines between Roumania and the Baltic has, in general, two distinct elements of the highest moment to us in the West. First it is apparent that the recent efforts of the Russians, though acting with inferior numbers, have at last drawn the newly trained men of the enemy to the East, not only in the regular drafts which have been coming in for a long time past to fill gaps, but in larger numbers, including probably whole new formations on a grand scale. The enemy has, therefore, decided that a violent new effort in Poland is necessary to him, and that until some sort of more or less conclusive result is arrived at there he must continue to direct on to that field his remaining reserves.

Secondly, it is obvious that this great movement has not one co-ordinated strategic object.

This last point is really an important one for us to seize. It is on a par with so much that has already appeared in this campaign that we cannot afford to neglect it, and the lack of co-ordination apparent in this new counter-offensive is perhaps the chief adverse element to the enemy in the whole problem—for on the north, that is, upon his left wing, he is acting with a purely strategic object, upon his right with an object largely political.

We must not misconceive the origin of this double motive. It is not due to confusion, it is due to necessity. In the north the political problem is a clean one. Two great forces at the orders of two great Governments with no serious neutral within striking distance at all are at issue, and victory or defeat will be determined by the action of existing armies alone. Therefore is it that the problem the Germans are engaged in at the Baltic end of their line is a purely strategic problem.

On the other hand, the problem the Austrians and Germans are engaged upon at the Carpathian end of their line has become mainly a political one.

Here there is a powerful neutral—a neutral capable of throwing into the field nearly or quite half a million men, a neutral whose capacity for war, though not recently tested, is believed, in so much as this capacity depends upon organisation, to be very high, and a neutral whose popular sympathies are very well known to be opposed to our enemies. That neutral is Roumania.

So long as the problem in the Carpathians remained a strategic problem, so long was the struggle a struggle for the northern passes, and ultimately for the great transverse railway by the use of which alone can an army in Galicia live through the winter: so long was it secondarily a struggle for the release of Przemyśl, but in the last two weeks the German General Staff and their Austrian Allies have evidently received news which convinces them, rightly or wrongly, that Roumania is in the act of deciding.

The whole weight of the campaign upon the south, or right wing of the Austro-Germans, therefore, has swung as though upon an axis. It is but three weeks ago that their main effort was directed to the maintenance of the Dukla, of the Lupkow and the Uszog, and not a month ago when Russian forces in Bukovina were steadily advancing, and in one place (Kirlibaba) had crossed the ridge of the mountains.

To-day the new German bodies and the new German drafts, which were here helping the Austrians, and in every probability a great mass of new Austrian troops as well, are doing more than hold as best they can the Russian strength in the Dukla, Lupkow and the Uszog Passes, while they are bearing heavily against the Russians to the South, have forced them back well into Bukovina, have passed the line of the Sereth River, and propose to attack Czernovitz: the reason of this swing being the desire or necessity of the Austro-Germans, first to produce the moral effect of impressing Roumania in this neighbourhood, and secondly to produce the local strategic effect of separating if possible the actual Russian from the potential Roumanian Army in the near future.

With these preliminary observations we can examine the whole of the eastern field and the new developments therein. And I propose to take that examination in the following order:—

First.—To analyse the northern operations: that is, in brief, to consider the lines of the Niemen and Narew.

Second.—To examine the present situation in the Carpathians.

Thirdly.—To consider what indications we now have of the presence and extent of the new enemy formations in both fields. Inadequate as is the material upon this latter point, it must be stated as clearly as possible, because what we shall have to meet in the West in the near future depends entirely upon what the enemy is having to spend *now* in the East: he only has a certain number of men to go round.

I.—THE LINE OF THE NIEMEN AND THE NAREW.

THREE points have been perpetually insisted upon in these notes as the foundations to any apprehension of the War in Poland. These three points are:—

(a) The inferiority (which is bound to continue for some time to come) of our Allies in numbers, in equipment and in amount of ammunition in the face of their enemy's superiority in all three.

(b) The lack of railways upon our Allies' territory, coupled with the necessity of a railway to the functioning of a modern army, particularly in its artillery.

(c) The all-importance of Warsaw as a bridge and a railway nexus: its importance being such that the Germans holding or cutting off Warsaw destroy the offensive power of Russia west of the Vistula and the San—that is, the offensive power of Russia against Prussian territory as a whole.

Now, in the light of these three principles, the strategic object of the new German advance in the north is perfectly clear. They propose to control that one of the three main railways meeting in Warsaw which runs northward and eastward—the main international line to St. Petersburg. With that in their hands the capture of Warsaw is achieved. Munitions cannot in great amounts, nor the newly equipped men as they probably arrive in great numbers, supply the defensive of the vital points or maintain that long line which stretches across Poland from the mouth of the Bzura almost due south to the Carpathians.

The natural defences lying along this line of



railway and standing before it like a screen, sheltering it from a German advance, consists in two rivers, the River Niemen and the River Narew. In its detail it consists in the central part only of the River Niemen (from the point (a) near Jurburg to the point (b) near Grodno), of the Borbr, a tributary of the Narew; of the Narew down all its latter portion until it falls into the Bug, and of the Bug up to its junction with the Vistula at Novo Georgievsk.

The weakness and the strength of this continued line are as follows:—

Its weaknesses:

First, its great length. It is in length from where the Niemen enters German territory to where the Bug, after receiving the Narew, falls into the Vistula, excluding the sinuosities of the rivers and taking only the straight lines between one defensible point and another, more than 250 miles in extent.

Secondly, it does not, as does the Rhine, for instance, form a complete barrier, because (a) the last seventy miles or so of the Niemen run through German territory and both banks of this lower part of the river have been in German hands continuously, so that a crossing here and the turning of the line is easily effected. (b) There is a gap between that point, Grodno, where the Upper Niemen turns eastward and ceases to form part of the line, and the point where the Borbr becomes available as a line of defence.

Thirdly, the strength of the line has been made to depend very largely upon permanent fortifications, and we know from the experience of this war that permanent fortification has not the value which it was supposed to have. Kovno, Olita, Grodno, Osovwiecs and the string of fortresses on to the Vistula are so many local strongholds, the power of resistance of which it is now known will depend much more upon the number of men that can be spared for the defence of outer temporary works than the existing inner permanent works—that has been the universal rule ever since the beginning of this war wherever a fortress has been in question. Verdun is proving it to-day and so almost certainly is Przemsyl.

Fourthly, not all these fortresses are of similar value. The last one, Novo Georgievsk, has the highest reputation, but many of them are of the second class, or at least are reputed to be of no greater strength.

The *strength* of the line, on the other hand, is best seen when we examine it in detail.

The Niemen where it leaves the Russian territory is about 500 yards broad and a deep, navigable stream till quite half-way between Kovno and Grodno it retains this character to the full, and even as high as Grodno or rather in the reach which is below that fortress it is still a formidable obstacle.

Secondly, just as the Niemen becomes narrower, more winding and therefore more open to an attack, the enemy finds himself in that confused and difficult country which is the continuation of his own Masurian Lake district. He is in the midst of all that tangle of marsh, lake and forest, the central town of which is Suwalki.

Thirdly, to the south of this, again, where a small scale map suggests a mere gap between the two rival streams, the defensive line is admirably strengthened by nature in two ways. There

is the great mass of forest several days' march in length and breadth, which takes its name from the town of Augustowo, and is continued in another great mass of forest southward, while the valley of the Borbr, especially below Osowiec and before it falls into the Narew, is exceedingly difficult of passage; vast stretches of marsh, notably the Lafi and Wizna marshes, miles and miles broad, interrupt any passage west to east.

Fourthly, though topographically the weakest part of the line, is the Lower Narew. This stream is, below Ostrolenka, a very appreciable obstacle, comparable in width, I believe, to the Lower Oise, or the Thames above tidal water, and having no natural passages. But, more important than this is the fact that this last portion of the line is within easy relieving distance of all the great forces concentrated round Warsaw, and depending upon the stores and the communications of that principal depot of Russian Armies in Poland. There is a good treble railway service to Ostrolenka and Warsaw, and nowhere more than one day's march from the line or well within two days' march.

Fifthly, and lastly, there should be noted in the whole character of the line a particular topographical point which may very well prove of importance in the near future, and which has an element of strength in it against weakness due to the fact that it can be turned in German territory. That point is as follows:—

In the neighbourhood of the fortress of Kovno the course of the Niemen turns a corner. It is all very well to command both banks of the river in the neighbourhood of the Prussian frontier, but you cannot turn the line, in spite of commanding the right bank, until you have fought your way round a long detour right round Kovno. It is strategically true to say that you must hold Kovno, or at the least invest it before you can have really turned the line of the Niemen. Therefore upon Kovno, by all deductions from the more obvious necessities of the case, the German offensive must be directed. Part of the present movement may be regarded as a direct advance upon Kovno, for there are forces moving along from Gumbinnen, which forces had got as far as Wilkowyszki last Sunday. There are other forces following along either bank of the Niemen itself, which forces had at the same moment got about ten miles inside the Russian border.

The going here is tolerable. There are certain local marshes of no great size across the northern paths from Tilsit to Tauroggen, where the northernmost German forces now are; there is an excellent causeway, and all that country down to the Gumbinnen-Kovno line, a front of fifty miles, is fairly well provided and tolerable in surface, though it must be remembered that the alternate frost and thaw of the season have rendered the roads worse than usual. Alternate frost and thaw, by the way, though more extensive this year than usual, are not unknown in Northern Poland: Napoleon's retreat of 1812, for instance, a little south of this point (which legend has transformed into an almost Arctic operation) proceeded, as a fact, two months earlier in the year, through exactly the same alternation of frozen roads and thawing slush. It would have been less disastrous, perhaps, had the frost always held.

Kovno, then, is the point upon which we shall probably find our attention fixed during the next few days. Any turning movement round Kovno for the investment of that fortress meets with two obstacles, with which I shall next deal.

Upon the right bank of the River Niemen in front of Kovno, from the point of view of the German advance along that bank there are two obstacles, of which the one is far more serious than the other. The first of these is the small River Dubissa. The line of this stands at a rather less distance from Kovno than does the line of the Bzura and the Rawka from Warsaw. It is in the twenty odd miles away at its junction with the Niemen instead of in the thirties. It is important to note this, because it is evident that the furnishing of a defensive front being, as it is, in the nature of the spokes of a fan, a certain amount of elbow-room is of advantage. If you have to distribute ammunition and food over a front, say, of thirty miles from a point only five miles behind that front, your extreme munitionment will be very much more hampered than your central munitionment, and the co-ordination of your defences will be adversely affected. Still, twenty odd miles is enough for a radius, and the Dubissa might well be the line upon which a defensive to prevent the investment of Kovno upon the north would stand.

But the Dubissa is even at its approach to the Niemen quite a small stream, and it slopes away in its upper reaches from the Kovno position. Much nearer Kovno, indeed about an hour or two outside the western suburbs of that half-Polish town, is a far more formidable obstacle, the Niewiasa. This stream is deeper and broader than the former. It is not defensible by marsh land, but there is a considerable belt of wood in strips along either bank, a feature which, unfortunately, cuts both ways, but, on the whole, is better for the defence in the situation of that particular line, because the woods screen the massing of men behind the river better than they do the massing of men in front of it. The Niewiasa, then, is the line which would be the obvious position were it not so near the town itself. The Wilia, a very formidable stream, which enters at Kovno itself, is, of course, out of the question except at some distance from the town, for the town itself is astraddle of the water. Indeed, Kovno has only been fortified because it affords protection to the junction of the Niemen and the Wilia, just as Namur affords it to the junction of the Sambre and the Meuse.

By this it is not meant that we shall see a stand either upon the Dubissa or the Niewiasa. A line of trenches might be held upon the right bank, well forward of either position, or, again, a main German advance from the *south* might be the chief operation, but so far as natural obstacles are concerned, these are the only two in the neighbourhood of the northern German advance.

Such being the elements of Kovno and its district, (the point where Napoleon watched his armies cross into Russia, his hands clasped behind his back and he whistling "Malbrook." It was the height of June; there was hardly darkness in that high latitude, though it was but just past the midnight), let us consider next the more southern portions of the line.

The enemy has already experience of an attempt upon the Grodno district, where he failed so conspicuously last autumn. If it be asked why

both *his* pursuit of the Russians after Tannenberg and *their* earlier operations were conducted in this difficult belt, the answer is that which I gave last week, that until either party had sufficient numbers equipped and ready neither could extend its line so far up to the North as the open country, beyond the lakes and the Kovno-Tilsit district. Now, with sufficient forces for reaching north of the lakes and near the Baltic, to link up with the general line, obviously the enemy, as much as our Allies, will prefer the easier going, and the attack will hardly develop its main strength in the Suwalki, Kovno, Osiwiec district.

That is why we hear of the Russians holding their own at Lyck. They are holding their own at Lyck because the main German forces are not pressing in the centre at all, but to the north and to the south of it.

Now, when you get south of Osiwiec you are on that string of minor fortresses Lomza, Ostrolenka, Roshan, Pultusk, Sierok, which all follow the line of the river and repose upon the very strong ring of Novo Georgievsk. Nevertheless it is to be presumed that a great effort will be made by the enemy in this belt and probably a little to the south of Ostrolenka. It is true that he has here no railway, but he has fairly good roads and a railway to the north of him, not much more than two days' march away on the frontier, and to the west of him at (C), (C) from four days to nothing according to his approach to that railway down the river Narew. We may sum up and say that this new German offensive in the north, not unexpected in its nature, but somewhat unexpected in its rapidity, will presumably include two different operations—the attempt to invest Kovno and the attempt to pass the Narew south of Ostrolenka. Of these two operations the former definitely turns the defensive line; the latter alone would immediately strike at the great northern line of communication of which Warsaw is terminus; and we must again bear in mind at this stage that in the two operations Kovno, which will be quite a separate matter on the Russian defensive side from the holding of the Lower Narew, is the easier task for the enemy to undertake. But the stroke at Ostrolenka and south of it, should it be successful, would be the more fruitful for the enemy because it would lead, were it successful, to the cutting off of Warsaw.

Meanwhile, the enemy is, as usual, making everything he can of his advance in his reports: every bogged or disabled gun of the Russian retreat is counted, and every wounded man left behind—while vague total numbers, obviously exaggerated, are given us of his captures as he advances. But it is quite certain that there has as yet been no decisive action in this field. The whole business has been the retreat of half-a-dozen Russian corps before, perhaps, ten or twelve German ones, just concentrated for this new effort.

II.—THE CARPATHIAN FRONT.

IF these are the conditions upon the extreme left or northern wing of the vast line, and if these purely strategic considerations determine the actions there taking place, what determines the corresponding action upon the southern or right hand, where the Roumanian border marches with that of Russia and of the Austro-Hungarian empire?



I have already said in the remarks preliminary to this that the political factor was here predominant.

It will be seen in the accompanying sketch that there is nothing to prevent Russian and Roumanian forces from joining should Roumania shortly go into the war, because a common frontier between Russia and Roumania runs several hundreds of miles. None the less a wedge struck in by and including the position of Czernowitz would cut the Russo-Roumanian effort in two, for it would cut the main railway which affects all the eastern Galician and Bukowina portions. The Austro-German advance in this region, which would be very serious, already threatens that railway. A mere gap or breach in the line, though serious, would not be fatal. But a thorough occupation by the enemy of the whole of Bukowina would be a very different matter. There is no good railway system running through the western territory by which the Russian army in Galicia, western and central, could act as one with an army in Northern Roumania. The above sketch shows

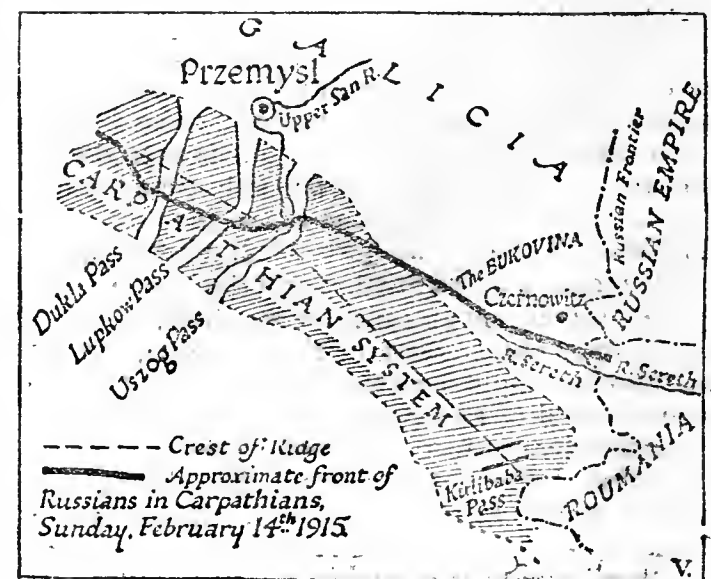
ing the railway system on either side of the frontier is sufficient to prove this. What the war's fortunes may be here in the next few days we cannot tell, but we can establish a criterion of the enemy's success. If he occupies Czernowitz in force he has in this region established his object: for that town is the axis of all the railways.

Now, what about the Northern Carpathian Passes where the enemy originally intended to make his greatest effort, but from which he has been diverted to this new southern effort against Bukowina, and which are now in part held by our Ally?

The position is very confused, and it is made none the easier to understand by the fragmentary nature of the Russian and of the Austrian communications.

Let us first state what we positively know. We know that the Russians are over the crest of the Dukla, we know that they are not yet debouching from that wide and easy valley on to the Hungarian plain below; they are not even yet at the southern mouth of the pass. We know that they were some days ago across the crest of the Lupkow, and we have no news from the enemy (as we surely should have if things were so) to the effect that they have lost that advantage. But here again we know that they have not yet advanced beyond about half-way down the Hungarian slope, even if they have for so far. Our Allies do not, so far as I can gather, hold the crest of the Uszog. They are still fighting on the upper torrents of the San. They here claim certain successes, but their very mention of the district proves that they are there upon the wrong side of the hills. South of the Uszog they are certainly everywhere east of the crest until we get to the Bukowina, where, as we have seen, they have fallen right back on to the plain.

The general position is therefore to-day, or was last Sunday, as in this sketch.



More than that we cannot say, but what we can gather both from the effort here and from the effort hundreds of miles away in East Prussia, is that the enemy, both Austrian and German, has now begun to use very seriously the newly trained men sent forward as drafts to replace losses, and even the new formations with which we have so long been threatened.

We further know that he is, for the moment at least, making expenditure of these last reserves of energy upon the eastern field. Let us turn,

therefore, to the last point, which is a guess—it can only be a very rough one—of what he has to spend in this fashion, and of the proportions in which this reserve fund of human energy has already been drawn upon in the hope of an immediate decision in Poland.

III.—THE ENEMY'S USE OF NEW MEN.

UPON the two opposing sides, that of the Germanic Powers and that of the Allies, two contrasting elements of reserve power have appeared.

It is that contrast which lends the clue to all the later phrases of the campaign, and the development of that contrast should decide the issue.

[That contrast is as follows:—

Roughly speaking, upon the Germanic side there is a limited known reserve of man-power for which equipment was prepared in sufficient or nearly sufficient amount before Berlin forced the war upon Europe. That is the advantage Berlin obtains by choosing her hour for fighting and by having spent over two years in making all ready for the unexpected blow. The limitation of the human forces at the disposal of Berlin and its Allies is a necessary disadvantage.

Roughly speaking, Russia, Britain, and, to a much less extent, France, have a certain elastic reserve of man-power.

As to man-power France has some elasticity, because (a) she did not expect to use her elder men nor desire to do so, (b) she refused to use men below the military age, (c) men exempted were as a rule exempted wholly and not labelled for military but non-combatant office (for the most part), (d) she has a certain recruiting field in her colonies.

Britain had a difficulty, but a much greater elasticity. Her difficulty was that her new recruits required lengthy training.

The difficulty of Russia lay wholly in the tardiness of equipment. She had a large trained reserve of men; young men and very apt.

It must be remembered that the Germans, having control of the Baltic, and having through their Turkish alliance control of the Dardanelles, blockade Russia absolutely, save upon those ports, Archangel and Vladivostok, which are ice-bound at the critical period. The German Government is neither afraid of neutrals, nor too careful of financiers—who, for that matter, are still laying their money all over the world on its success. The German Government prevents *anything* from getting into Russia that it can prevent.

This tardiness in equipment is the great handicap on the allied side. But it is a handicap which every day tends to remove. Therefore, the Germanic Powers are, more than ever, fighting against time.

Next, note that when the numerical preponderance passes to the Allies, that moment will correspond more or less with the coming of better weather, which will permit of a vigorous offensive in the West, before it permits of a vigorous offensive in the East, and remember that this vigorous offensive in the West will, unless Germany gets a decision in the East, be begun by the people who have the initiative, who, in the West, are the Franco-British forces. Next note that *unless* a decision in the East is reached before the spring

the Germanic Allies are badly handicapped, especially in the northern field of Poland, by the state of the roads in the general thaw that comes after the winter.

Put all this together and you will remark that Germany and Austria have it in their interest to put as many men as possible into the eastern field just now.

Now, how long does it take to train a new man, and in what way is he best used?

It takes about six months, and after six months you can use your man with fair confidence even in large masses, *but he makes very much the best material when he is mixed with existing units*, and very much the worst when he has to act in large numbers upon his own account and under the leadership of his own officers, of whom but a small proportion can be professional. To all these considerations add the following and concluding one: (1) That Germany had everything ready for training a large untrained body especially earmarked as a recruiting ground; (2) that Germany and Austria have lost very heavily—much more in proportion than the Allies, (3) that every factor in the struggle besides those mentioned (the factor of the imperfect blockade growing more perfect, the factor of enormous wastage, the psychological factor of a populace dependent upon self-confidence, the factor of the wastage of cadres, the dynastic factor, the factor of the hesitating neutrals—all but one of them anti-German, etc.), makes it important for Berlin to impose an inconclusive peace as soon as possible; take all these considerations together, and it can only be reasonably concluded that the Germanic Allies have put into the field as many new men as they can have found in equipment (for the six months have passed), that they have drafted most of these in as new material to feed the existing, but heavily depleted units, that they have equipment ready for such, and have therefore been able to put them forward the moment they thought them sufficiently trained; and, lastly, that they will be very chary of using wholly new formations; in other words, that they have already very seriously drawn upon the actual human material available.

This new German and Austrian offensive in the eastern field, of which the present week has seen so striking a development, is, it may be reasonably conjectured, the first considerable effect of the new levies. It will be of the greatest importance to one's judgment of the campaign to see how those levies comport themselves, and in what numbers they would seem to have appeared.

The first of these elements lies in the future. The second is susceptible of a rough—but only a very rough—speculation.

We know that upon the West the enemy's numbers have been maintained: had they not been maintained a line of 400 miles, with quite 5,000 men a mile, could not have been held. We are as certain as calculations can make it that the German losses, allowing for the slightly wounded already returned, or about to return, give us quite a million and a-quarter men of absolute loss and probably much more (the German Army alone is here considered, because as the question is one of proportion, its sole example will suffice). Now, we are equally certain that numbers have been maintained in the East and even increased before this offensive movement was begun. We

may then safely say that a million and a-half new men and probably more have been drafted in in one way and another up to the present moment. But, though there is a very active newspaper discussion still raging upon the point, evidence has been given in these columns to show that the available reserve of men (not boys) in Germany's hands would not be very largely over two million: two million and a-half is certainly an excessive figure.

Well, then, it would seem that by whittling down every item so as to weight the balance against false expectations, we may justly say that the German Empire—and presumably the Austro-Hungarian also—had used and brought up something like half of their available reserves in man-power before this new counter-offensive was attempted.

That counter-offensive is proving serious numerically and still has great weight of men behind it after more than a week of effort. The Russian retreat has been rapid, and it has been provoked, without a doubt, by the discovery of very great bodies of men newly appeared in East Prussia. The same is true in a minor degree of the Austro-German success and of the corresponding Russian retirement in Bukowina. It follows that to the very heavy drafts of new men demanded by the enemy's army before the recent movement, and amounting to probably more than one-half of their total margin, there have recently been added further large new forces, and the conclusion would seem to be that the enemy is now not far from having put into operation in one way and another the greater part of his available reserve in men. He may have a third of that reserve still unequipped, or for some other reason not yet usable in the field; he may have a trifle more. He has not got a full half. And he is being compelled to use the flower of this new and last material in the East because our Russian Ally, with all their heavy difficulties of equipment and their serious lack of communication and in spite of a strict blockade (which he must wonder that the enemy does not also suffer!) in spite of still inferior numbers, and in spite of that lack of railway facility which is the life of a winter campaign in such a climate, has managed to keep the eastern field unceasingly active and an increasing menace to our opponents. We shall have discovered before this campaign is over that we have owed very much to the invincible tenacity of the Russian soldier.

The full consideration of these numbers, of the new formations and new drafts on the enemy's side, I will reserve for discussion next week upon

the elements we have fore-calculated, the duration of the war. It is enough for the moment to sum up and to say that the enemy has already called up more than half of his margin of men, that he has been compelled to put his latest and large addition into the eastern field, that he is there expecting an immediate decision, and that if he fails to obtain it *he will be unable to force a mere defensive upon the East such as he has established on the West, and will therefore be unable either to withdraw large forces from the East to the West or to raise new men in drafts or new formations in any considerable number.*

But if he does arrive at a decision in the East, then he has still a large margin of men—probably equipped and ready—to come upon us with the better weather, and to try and break the cord which still binds him in the West. He must act quickly and while still the Polish weather hampers him, because his time in the West is drawing short and about the coming of the nightingales it may be too late.

THE REMAINING FRONTS.

Everything of interest this week has concentrated upon this new development in Poland. In the West the stagnation has been almost deeper even than in the week before. The wooded height (not quite 3,000ft. above the plain), which the light Alpine troops carried in the Vosges five days ago, affords no more than an incident. The loss of a French trench in the wood before Souain was upon the same scale. The wood fighting of the Argonne has had so little effect that if you trace it on the map you find no more than a few paces won and lost *not* in the decisive direction—which is north-west and south-east—for the Germans are trying to close the buckle and the French to keep it open), but at right angles to that direction: the recent and unimportant conflicts of the Argonne have been waged in the heart of the forest, not on its Verdun edge—and their front has faced away from Verdun. The only other movement worth recording has been the attempt of the Germans to shell the Allies out of their new trenches upon the big sandhill east of Nieuport, and their failure hitherto to recover what they lost here a fortnight ago.

On the Servian frontier things seem to be at a standstill. There is no news from the Caucasus nor (at the moment of writing) any renewed attempt upon the Suez Canal.

NOTE.—This Article has been submitted to the Press Bureau, which does not object to the publication as censored and takes no responsibility for the correctness of the statements.

In accordance with the requirements of the Press Bureau, the positions of troops on Plans illustrating this Article must only be regarded as approximate, and no definite strength at any point is indicated.

THE WAR BY WATER.

By FRED T. JANE.

NORTH SEA AND CHANNEL.

Hostile Submarine Bases.

IF Von Tirpitz has so far failed to create any particular effect on our merchant shipping with his submarine commerce warfare, he has certainly managed to attract attention and arouse widespread interest in the question of how the German submarines manage to act and keep going so far away from their home ports. It is impossible to reply individually to the scores of readers

who have sent in information or theories on this question, so I am here dealing with the matter in a general way.

Roughly, the correspondence on this subject resolves itself under two main heads: (1) Signalling and shore bases; (2) independent sea supply.

As regards the first of these, the usual theory is that stores exist at various places in these islands—not necessarily on the coast—and that they are taken out in small neutral coasting steamers, times and places being signalled from the shore. No doubt something of this sort has happened in the

past, and to some extent may continue to happen; as, despite all vigilance, there are plenty of lonely places from which signalling is possible. On the other hand, a good many reports about signalling have, on investigation, proved susceptible of a simple "explanation"—though here, perhaps, the culprit would be particularly careful to arrange for that!

The second group of theories is along the line that the Germans, foreseeing the possibility of land stores being unearthed, have arranged a second string to their bow in the shape of stores sunk at certain easily-located shallow spots, and so their submarines are enabled to keep the sea for practically indefinite periods—the limit being running out of torpedoes.

There are no inherent difficulties in the way of obtaining such submerged stores. They are sure to be provided with appliances which will make grapnel fishing for them quite easy, and once they are brought to the surface their transference to the submarine at night is a most simple proposition.

Mr. Simon Lake, U.S.A., inventor of the Lake submarine, has, however, been amplifying this matter to an extent which—though no doubt useful to Mr. Lake as an advertisement—has discouraged a number of people in this country to a totally unnecessary extent.

One special feature of the Lake submarine is that it has two submerged trap doors in its bottom. Through these doors mines can be laid, or a diver explore the bottom of the ocean quite as thoroughly as many a year ago Captain Nemo, of the *Nautilus*, did in the pages of Jules Verne.

So far, so good. But Mr. Lake (or his interviewers for him) has made the further statement that the German submarines have adopted all his submarine trap-door devices. So far as I can ascertain, they have never had the prescience to do anything of the sort. Photographs of the sections of the latest type of German submarine (presented by the Kaiser to a German museum) give no indication whatever of any such useful door. In any case, it is unnecessary for the obtaining of underwater supplies. For that matter, the Lake device, if I remember rightly, was originally advertised for the quite unmilitary object of recovering treasure from by-gone wrecks. To give a militant touch later on the obvious alternative of mine-laying was substituted. But, so far as the securing of previously laid under-water supplies is concerned, submarine trap-doors do not affect the question.

The Great Air Raid.

On February 12 a force of thirty-four British naval aeroplanes attacked Ostend, Zeebrugge, and district with a view to destroying communications and the German naval base at Zeebrugge. Ostend railway station was more or less destroyed, and mischief inflicted on the railway in several places. It was, of course, impossible to ascertain the exact damage inflicted, and it is important to note the official statement that "no submarines were seen."

Probably directly the aeroplanes were sighted any submarines at Zeebrugge promptly went below and remained there till danger was past—their most sensible course. It does not follow, however, that the German submarine service sustained no damage. We may reasonably assume that there was a submarine or two being put together, or, if not that, at any rate, plant for the purpose which must have been considerably damaged.

While it is wise not to exaggerate the importance of the raid, there are several points in connection with it which call for attention.

Of these, the chief seems to be the complete impotence of the land fire. Seeing the large number of machines engaged it might have been expected that what missed one would have hit another on the principle of "firing into the brown." Also a fair number of aeroplanes have been brought down during the war by shell and rifle fire, and what has happened before might well have been expected to happen again.

One inference is that the defenders were flurried with the numbers of the attack, and so fired on no regular system: but as the force probably divided and attacked several spots simultaneously, this is a questionable hypothesis.

So we cannot make much out of this point, saving that obvious anti-aerial gunnery is proved to be a very exact science indeed, needing a great deal of training and probably a good deal of natural aptitude as well. The ordinary "man behind the gun" seems more or less completely harmless against aeroplanes.

No doubt this will be remedied in time, but the selection of suitable men and the necessary training is unlikely to be accomplished very quickly.

The lesson of most importance, however, is that the aeroplane is the correct reply to the aeroplane. The German offensive-defensive in this direction seems to have been extremely feeble or else non-existent altogether. It is this circumstance which robs the Ostend and district raid of its importance as a guide and lesson, and makes "Great Air Victory" sound ultra-Yellow Press.

Of far more real importance probably was the foiled German attack on Dunkirk, which has been chronicled merely in short paragraphs. Here the Germans retired on finding Allied aeroplanes prepared to fight them in the air. Their position was roughly "Everything to lose and nothing to gain."

One swallow does not make a summer, but herein may lie the glimmerings of a new law which will eventually sharply differentiate between war in the air and war as we know it on land and water.

On the ordinary elements of the past it has been abundantly proved that victory is almost bound to go to the attack, because it is able to select its own time and place. At first glance this seems even more true of the air. We do not immediately recognise that the circle has perhaps been over-shot, that the attack is hampered by having *two* objectives: (1) Destruction of something on land; (2) Destruction of defending aircraft which intervene. The defence, on the other hand, has only the *single objective* of destroying the enemy.

Hence as time goes on we may expect to see aerial warfare become more and more puzzling and intricate, and not impossibly a diminution in the number of air raids as "counters" come to be more and more studied.

This, at any rate, seems to be the outstanding lesson of Dunkirk; and, unless I am greatly mistaken, we may expect at no distant date to see aerial warfare resolve itself into something analogous to modern chess as played by the best masters, or fencing as displayed by its leading exponents.

The surprise attacks of to-day will, in the future, come to be regarded as inexpressibly crude amateur efforts, bearing about as much resemblance to what will be evolved as the naval warfare of the early Plantagenet days bears to the naval warfare of to-day.

This, perhaps, is the best illustration of any, for anyone who has read history even in the most cursory way. In those old days the French ships would casually sack an English town, and the English ships as casually sink a French one. Only very gradually was it discovered that the ship must fight the ship for any military asset to be secured. Taking the stupid bombardment of Scarborough, the Hartlepoons, and Whitby into account, it would look as though Germany has not yet succeeded in arriving at a true military perspective. If she turns out to be equally obtuse as regards the air, she is asking for trouble as surely as Persano asked for it at Lissa nearly fifty years ago.

Air power is governed by exactly the same immutable laws as is sea power, only a good deal more so. By evading our aerial defence it is perfectly possible for German aircraft to do quite a lot of damage to London or other places. By further evasion it is possible for them to return in safety. The risks, however, are great, and while the mastery of the air is in dispute, any such action is folly from the military standpoint.

The Power which secures the mastery of the air will be in exactly the same position as that which secures the mastery of the seas—that is to say, able to bombard and destroy without let or hindrance. But the idea that the air admits of substantial results from surprises and evasions is entirely incorrect. It is pleasing to record that the fact that we employed thirty-four aeroplanes to do to Ostend what could have been done by half-a-dozen or so proves that we at least have recognised the cardinal fact which governs aerial warfare.

The obvious inference is that we were out for a fight and that the Germans declined action. If it means anything at all it means that we have learned the lesson of the Plantagenet Navies better than they. Which is all so much to the good.

Grahame-White tumbled into the water; Samson will probably emulate him soon. After that we shall have no more air-deities, and the real business of aerial war will begin. It will be a war in which there is no place whatever for "heroes"—to be brutally truthful a war in which the bulk of those engaged hope that every "hero" will die an early death.

I know the Naval Air Service pretty well. It is not afraid of anything that Germany can put up against it. But it is in deadly terror of adulation from the sensational Press. The only thing the Naval Air Service as a whole desires is that whatever it achieves or does not achieve should be put down to the Naval Air Service as a whole. In a general way their motto may be summed up as:—"Do your job, but be careful to keep out of the limelight."

There is no one who hates the sensational Press quite so much as the successful "air bug" or the successful "submarine crab." By the time the eulogies on him are finished he feels a veritable worm, and even his best friends regard him in a somewhat similar light. It may sound strange: but I know of more than one flying man who has funk'd things for fear of being suspected of seeking big headlines in the daily Press.

The Blockade Threat.

By the time these lines are in print, the momentous 18th February will have come and gone. Whether it will be different from the 18th January or the 18th December remains to be seen. Personally, I am inclined to think it will turn out to be a crude attempt to induce Admiral Jellicoe to alter his dispositions—hardly a promising scheme. In any case, and supposing the scheme of piracy to be embarked on in a larger measure than heretofore, the Germans will discover that, as Mr. Churchill hinted in his speech in the House of Commons, the resources of the British Navy are by no means exhausted. The possibility of all German food supplies being cut off as a retaliatory measure may make von Tirpitz hesitate as to the perfection of his scheme.

Also, quite apart from what the Navy may be doing, the spirit of the British Mercantile Marine is, as we have seen in the case of Captain Probert of the *Laertes*, hardly of a nature to submit to the latest form of "Kultur."

Furthermore, if von Tirpitz has studied the psychology of our First Sea Lord, he must be well aware that Lord Fisher's "Ruthless, Remorseless, Relentless," was and is far more than a mere alliterative phrase.

A cleverly reasoned article in the *Daily Mail* this week suggested that Germany's best move is to compel the U.S.A. to make war on her, as that would give her the opportunity of offering peace while power remains to her, on the grounds that she could not fight all the rest of the world, and that any refusal of the Allies to make peace, which would enable Germany to prepare for a further struggle, would put American sympathy on the side of Germany. This may explain the "blockade."

Meanwhile, however, several neutrals are painting their nationalities in large letters on the sides of their ships, and all no doubt will eventually adopt this form of protection. This will render more or less inoperative any use of the neutral flag by us—and there would be difficulties in the way of adopting the neutrals' protective system.

The psychological moment will come if and when the pirates sink without warning a British liner on board of which are American passengers.

It is sometimes said that the ratio of "real Americans" to the entire population of the United States is small, especially in voting power, and that immigrants of non-American ideals are in the majority. Personally, I doubt this, except perhaps in the case of German-Americans. Otherwise, after a few years' residence, a high proportion of immigrants are apt to become more American than the Americans. And no real American is going to stand by unmoved and see his fellow-countrymen left to drown because some German has a notion about "frightfulness." Nor, if the American nation be dragged into the conflict, does it seem likely it will love its enemies to the extent of enabling them to repeat the performance on a more auspicious occasion.

GENERAL MATTERS.

G. P. (Oxford).—As the Germans have officially stated that their fleet took the offensive in the North Sea action, it certainly looks on the face of it as though their official announcement that three British destroyers were sunk was a "deliberate lie." Personally, however, I am still of opinion that it was more probably an honest misconception on their part. They saw one of our destroyers hit, and the speed at which they were running away, coupled with the smoke, etc., would cause that destroyer to disappear almost instantly, and if a couple of boats slowed down to stand by, they would also seem to have disappeared and would be presumably sunk. This is an undramatic explanation, but, in all naval history, I believe that it is only the Turks and Chinese who have deliberately circulated false official stories of successes. The reasons for not doing so are not a love of the truth, but a consideration of the effect on *moral*, should the lie be discovered in the country of the liars.

At first sight this seems discounted by the German statement that they "took the offensive," but that, after all, is only our old friend's "strategic movement to the rear"; and I suppose that Hipper has long since explained to Von Tirpitz that "offensive" meant endeavouring to draw Beatty into a mine field. What we would like to believe and what we have to believe are not always one and the same thing.

W. B. J. M. (Kensington), H. R. (Hampstead), E. T. (Liverpool), G. H. (Bournemouth), and others.—You will note that I have dealt with the submarine matters to which you refer in the text this week.

P. J. B. (London, W.).—I am afraid that I cannot add any further conjectures as to why Hipper did not return to attack the *Lion* and *Tiger*. On page 15 of the issue of February 6 you will find that the attempt to draw across a mine field theory is the probable explanation.

A. G. C. (Barnt Green).—I have not read the pamphlet to which you refer, but you may take it that the German official

statement as to the loss of three cruisers and one destroyer in the action off the Bight of Heligoland is quite correct. There was so much fog about that it was impossible for us to ascertain the exact strength of the Germans. The four-funnelled cruiser was probably the *Roon* or *Yorck*. Very likely she received a hit and hauled out of action. It has further to be remembered that a ship can easily get a funnel or two knocked out of her in action, and so subsequently be presumed to be another vessel.

D. G. (Wales).—Your theory about a small coasting steamer being in communication with the German submarines is by no means improbable. As to the "well-dressed strangers" in your district, I should say that your best course is to pick a few private quarrels with them and learn what language they use when they are excited.

T. W. (Manchester).—The lost German destroyer to which you refer is, of course, *S90*. The other matter I am referring to in the text, though, as nothing has appeared about it in the Press, it may come under the ban of the Censor.

W. Y. (Athlone).—The idea of bullets containing phosphorus or something similar in the base being fired at Zeppelins is all right in theory, but, in practice, suffers from the fact that hydrogen is not an explosive unless mixed with air. Given enough such bullets ripping up one particular bag, it is possible that an explosion might occur, but I doubt if it is in the probabilities.

A. H. A. (Glasgow).—I have forwarded your information to the proper quarter.

R. D. B. (Dorset) and H. W. R. (York).—Something similar to what you suggest is already in existence.

L. F. S. (London).—I do not think that there is anything that our Navy does not know in the matter of locating mines and sweeping for them. The device to which you refer is somewhat similar to that employed by Farragut's monitors in the American Civil War. It was effective so long as it was merely a question of the bow of the ship hitting the mine. In the Russo-Japanese War it did more harm than good, as this war saw the introduction of blockade mines—a couple of mines fastened together in such a fashion that on the connecting cable being touched one mine would be brought up against one side of the ship and the other to the other.

W. McC. (Cornwall).—I have forwarded your letter to the proper quarter. The story you tell me is interesting, but you can trust the Navy to be very much on the look-out in the district you mention.

L. L. S. D. (Leighton Buzzard).—The speed of 26.4 knots assigned to the *Blücher* as best speed in "fighting ships" merely indicated the *maximum* to which she reached for a minute or two; the 25.8 was her best on the measured mile. None of these fancy speeds go for much.

You have more or less caught me tripping about the *Yorck*. She ran on to German mines after the first attempted East Coast raid. The four-funnelled cruiser "was either the *Roon* or *Yorck*," but the *Yorck* having been previously disposed of, it was, of course, the *Roon*, or one of the new four-funnelled light cruisers still left in existence.

C. (St. Leonards).—See answer to the above.

H. M. (Hendon).—It is possible that the Brunton scheme about which a letter appeared in the correspondence columns last week, may have points about it, but I am afraid that would not apply to your proposed improvements. Apart from other questions the difficulties of fitting would be very great. With reference to your two questions, any reply would be censored. Your theory of detecting periscopes by means of a masthead observation using a suitable colour screen is decidedly interesting, and has the advantage of proceeding along a known basis. At any rate, it would be worth trying.

J. T. S. (Ballyhooley).—(1) All the text-books give the monitors engaged off Zeebrugge as carrying two 6in. guns forward and two 4.7 howitzers aft. The draught is given as 8½ feet. (2) The amount of ammunition carried in super-Dreadnoughts is ample for all needs, but it is not advisable to state the exact amount. It may console you, however to know that it is more than you estimate.

F. C. H. (Liverpool).—Certainly if a merchant ship sighted a submarine, made for her and let go an anchor at the same time, and the submarine, submerged, were hit by the anchor, something would undoubtedly happen. But as the submarine would be moving under water in the process of diving, the chances of success do not seem very great.

W. H. B. (Headingley).—Experiments for the detection of periscopes are extremely interesting. I followed the rough examples with much interest, and would advise you, directly you have made a rough working model, to submit it to the Admiralty without delay.

E. J. P. (Lowestoft).—Many thanks for your kind appreciation.

(A large number of replies is unavoidably held over until next week.)

THE FUTILITY OF AIR RAIDS— THE EFFICIENCY OF AIR ATTACKS.

SOME POINTS IN AERIAL TACTICS AND STRATEGY.

By L. BLIN DESBLEDS.

IN the mind of the public there exists a great misconception about the meaning and the scope of an aerial offensive, and the plucky raid of Friday, the 12th inst., which was carried out with great skill and valour by our airmen over the districts of Bruges, Zeebrugge, Blankenberghe, and Ostend, has probably increased that misconception instead of clearing it up. This misapprehension, which appears to be shared by a great number of military critics, is due to the fact that there has been, up to the present, a general failure to distinguish between an aerial attack and an aerial raid. It is, of course, no easy matter to draw a sharp distinction between an attack and a raid, so far as the new weapon of war is concerned. The attack and the raid are both offensive actions, which depend not only upon the aerial force taking part in them, but also on the relation which those offensive actions will bear to the carrying out of a pre-arranged plan of operations. In his last article the writer endeavoured to prove two propositions: *firstly*, that so far as trench warfare is concerned, aerial raids can only lead to local and temporary embarrassments, and can have no important influence either on the character or the duration of that kind of warfare; and, *secondly*, that, in order to ensure the success of an aerial offensive at any place, the various vital points must be subjected to a simultaneous attack, and not simply raided. Additional confirmation of this reasoning has been acquired, once more, by the exploit of the 12th. That raid also affords us evidence that those two conclusions as regards trench warfare can be extended and made to apply to other kinds of warfare as well. In fact, the announcement issued by the Admiralty opens as follows:—

During the last twenty-four hours, combined aeroplane and seaplane operations have been carried out by the Naval Wing in the Bruges, Zeebrugge, Blankenberghe, and Ostend districts, with a view to preventing the development of submarine bases and establishments.

Here we have the object of the raid clearly set out. It was "with a view to preventing the development of submarine bases and establishments" that the raid was undertaken. Let us now see how far that object was achieved. The Secretary of the Admiralty's announcement gives the result of the raid in the following terms:—

Great damage is reported to have been done to Ostend Railway Station, which, according to present information, has probably been burnt to the ground; the railway station at Blankenberghe was damaged and railway lines were torn up in many places. Bombs were dropped on gun positions at Middlekerke, also on the power station and German mine-sweeping vessels at Zeebrugge, but the damage done is unknown. . . . No submarines were seen.

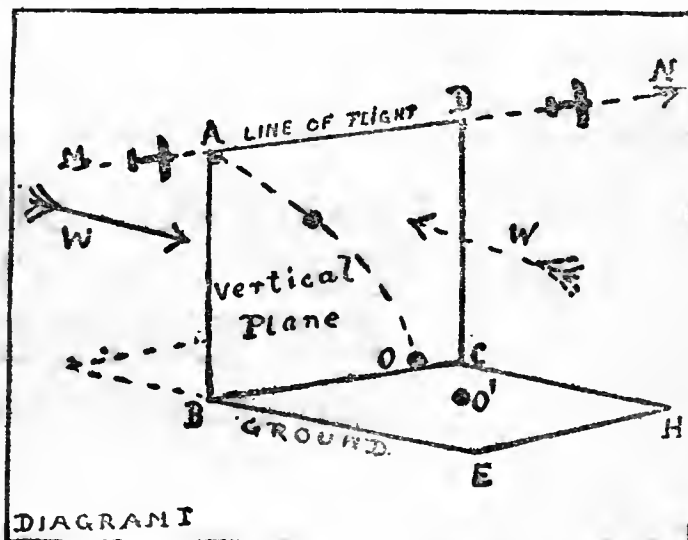
Whether these results prove that the special object of the raid has been, or has not been, accomplished, the writer would not like to say in an article meant for publication. But there is one conclusion which can, with certainty, be drawn from the Admiralty report, and which cannot be controverted. It is that whatever may be the real amount of damage done by the raid, such damage can only cause *local and temporary* embarrassments, which may delay, but will not prevent for ever, the development of those submarine bases and establishments.

The Admiralty further states:—

Thirty-four naval aeroplanes and seaplanes took part.

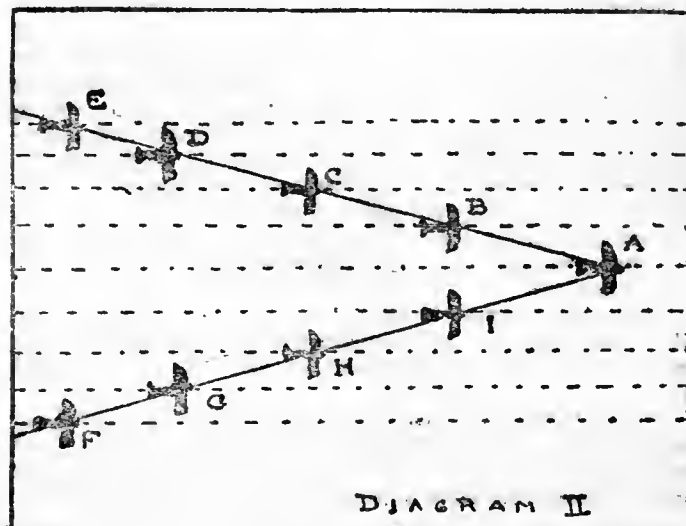
Here we have the reason why Zeebrugge, Blankenberghe, and Ostend are still available for the Germans to use as submarine bases. If these places had been *aerially attacked* instead of *aerially raided*, and if these attacks were constant and continuous, the German bases on the North Sea would be gone for ever. In his last article the writer has explained the meaning of the "*n-square law*," which establishes the fact that the *fighting strength of any force varies as the square of its numerical strength*. He now proposes to bring forward some other arguments which still further prove the value of an aerial offensive on a *comprehensive scale*, and the *necessity* for a large number of aircraft.

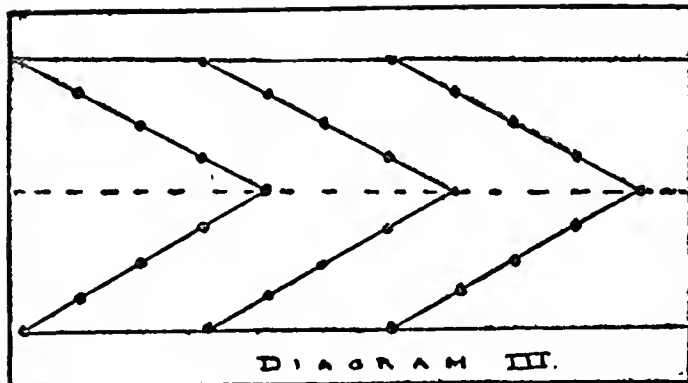
In Diagram 1, A B C D represent a vertical plane containing the line of flight M N of an aeroplane, and B E H C the horizontal plane, or ground. If there is no wind—an atmospheric condition which hardly ever occurs—or if the wind, either a head one or a following one, is exactly in the



line of flight M N of the aeroplane, a bomb, dropped from the aeroplane at the point A, will follow a course which lies entirely in the vertical plane and will strike the ground at some point O lying in that plane. If, however, when the bomb was dropped there was a wind blowing in some cross direction W, the bomb would be driven by the wind out of the vertical plane, and strike the ground at some point O' outside the vertical plane. In the same manner, if the wind blew in some direction W', the bomb would strike the ground on the other side of the vertical plane A B C D. Now, since at different altitudes, the wind may blow in different direction, it follows that a bomb, dropped from an aeroplane, flying at a great height, may be swayed one way and then another, and that that process may be repeated several times before the bomb actually strikes the ground. Several methods have been devised to steady the bomb in its downward course, and a number of inventions have been made with the object of reducing the influence of the wind on the bomb to a *minimum*. The fact, however, remains that the influence of the wind on bomb-dropping cannot yet be ignored.

The factor introduced by the wind, which can be easily corrected by artillerymen on the earth, where the speed and direction of the wind can be easily estimated, leads, in the case of aircraft, to a difficulty arising from the fact that the force and direction of the wind cannot be easily gauged by the airman who creates his own speed relatively to the air. The conclusion to be drawn from the preceding remarks is that, in the present stage of development of aerial ballistics, *bombs dropped from aircraft, at a great altitude, may fall either to the right or to the left of the vertical plane containing the machine, and that, therefore, to ensure the efficiency of an aerial attack bombs should be dropped from aeroplanes not only in the vertical plane containing the target, but also in other vertical planes to the right and to the left of that target.*





From this conclusion we can deduce a formation suitable for an offensive aerial fleet which is indicated in Diagram 2, where *A* denotes the leader of an aerial squadron of nine aeroplanes. In this arrangement the leading machine flies over the vertical plane containing the target, and there are on each side of that plane four machines. If the bombs dropped from the machines on the right of the leader are blown by the wind away from the target, those dropped from the machines on the left of the leader will be blown towards the target.

The same arrangement for a larger number of aeroplanes can be made as indicated in Diagram 3, where each dot represents a machine, and an examination of that diagram will make evident the importance of the *number* of the aircraft necessary to effect an aerial offensive of real value.

THE COMING SIEGE OPERATIONS AND THE INSTRUMENTS TO BE EMPLOYED THEREIN.

COMPARISON WITH SEBASTOPOL.

By COL. F. N. MAUDE, C.B. (late R.E.).

THE resemblance between the present war of trenches and the old siege warfare grows daily closer, and from all my friends at the front I hear indications of changes towards the more wholesome methods of former days. Sapping and mining are going strong, and every day we hear of mines exploded, craters occupied, and successfully maintained, against the enemy's counter attacks.

It is this successful tenure of the ground won that emphasises the advantages we are accumulating, for the holes blown out by mines are mere death-traps for the troops that rush them, *unless* and *until* their artillery has secured a considerable ascendancy over the enemy's guns and infantry. What happens now is something like this. Before our mines are exploded, our gunners have located and ranged upon every German gun position in their section; then, as soon as the mine is fired, and the crater rushed, every one of our guns turns on the enemy, and covers their batteries with showers of shell, thus rendering it impossible for them to interfere with our men in the mine crater whilst they are engaged in converting the side towards the enemy into a fire position, and helping them to scatter his columns as soon as they break cover for the counter-stroke that inevitably follows every mine explosion, whoever makes it.

We did exactly the same thing in the Crimea, and so did the Confederates in the siege of Petersburg, and the lines covering Richmond.

Some day it may occur to the man on the spot that driving mine galleries at the rate of one foot an hour in order to create a moderate sized crater once a week is a very slow and tedious method of progression when one's howitzer shells will produce as many craters, big enough for the purpose, and, moreover, grouped with sufficient accuracy, wherever and whenever you please. Then we shall adopt a far more rapid and secure method of progression than any we have hitherto tried. The idea is in the air; I have watched it coming for a long time, and one day we shall wake to find its universal application. Meanwhile we are also beginning to find out that trenches, in themselves, are nothing; it is only the men inside them that render them unassailable; and as week by week the quality of our adversaries deteriorates, our operations will crystallise out into a more co-ordinated form, and we shall begin to apply in a more drastic manner the resources we possess for localising the defenders in each separate sector of the front, and applying to them in a modified form, but equally effectively, the methods of isolation from supplies and reinforcements which have always in the long run undermined the soul of the defence with the greatest certainty. Men may get accustomed to shell fire, and grenades, etc.; they never become acclimatised to hunger and cold.

Our chief support in this coming phase of the campaign will be our airmen, and the manner of their operation is clearly foreshadowed by the raid on the Belgian coast last week.

What happened there, locally, will soon be general, at chosen points, all along the front, and until the Germans can find men as bold and daring as our own there is no protection for them from this form of attack.

Raiding the node points of the enemy's communications, whether by road or rail, they will gradually make the supply of the men in the trenches almost a matter of impossibility; and as our gunners gradually work up under cover of our trenches to ever closer ranges, their shells will go flying miles beyond the enemy, tearing up the roads between the depôts and the front, until the supply of food and small arm ammunition, to say nothing of heavier articles—trench mortars, rolls of wire for entanglements, etc.—becomes practically ruled out. We knew what our men suffered during the first months, when all the advantages of heavy artillery, searchlights, and so forth, were on the enemy's side. We have been profiting largely by that experience, and intend to improve on the example given us.

All this it needs no prophet to forecast. It is all in the course of natural evolution. We are passing rapidly through the same cycles our ancestors traversed again and again in the past; the objects before us were always the same, and all we have had to do has been to adapt our new means to the acquisition of the same ends. In the Crimea we had no searchlights, but we used star shell and carcasses (smoke shells) for the same purpose, and when our siege train proved inadequate we brought out and employed heavier weapons in numbers never before thought of. We even went beyond the mechanical skill of the age, and designed a 36in. mortar, by the side of which Krupp's much-vaunted 42 c.m. mortars would have looked mere babies. But the war ended before this monster could be brought to the front, and it was concluded, as I think this one will, by the sudden and complete collapse of the moral will power of the enemy.

We had never succeeded in easily investing him. Supplies could still, with difficulty, get through to the last, but the ceaseless strain of slaughter and the hopelessness of relief gradually undermined his powers of resistance, and the end came abruptly with the storming of the Malakoff by the French, an operation in which MacMahon's Division of the French Army lost nearly 50 per cent. of its men in a rush from the trenches of barely 200 yards. That night the enemy was in full retreat, and at some time not very far off a similar assault (in which, I hope, we shall play a more distinguished part than we did that day), only on a far greater scale, will bring about a similar result.

Men remain human beings only, and like causes produce like effects, whatever the weapons may be by which these causes are set in operation.

The current issue of the *Asiatic Review* is noteworthy, in view of the present prominence of matters Grecian, for an article on "Greece and the War," by Professor Platon Drakoules, who ranks as one of the principal authorities on Greek affairs, standing probably second only to Mr. Venizelos himself. The article, dealing as it does with the policy of Greece, the rise of the Young Turk party, and the elements out of which the present situation in the Balkans has arisen, is a valuable contribution to current war literature. Other interesting articles, including "England, Turkey, and the Indian Mohammedans," by Syud Hossain, and a descriptive sketch of the Cocos-Keeling Islands, where the *Enden* was destroyed, make this an extremely topical and readable number of the *Asiatic*.

A DIARY OF THE WAR.

SYNOPSIS.

AUGUST 3RD.—Sir Edward Grey stated British policy and revealed Germany's amazing offer, in the event of our neglecting our obligations to France. Mobilisation of the Army. Ultimatum to Germany. German and French Ambassadors left Paris and Berlin.

AUGUST 4TH.—Germany rejected England's ultimatum. English Government took over control of railways. War declared between England and Germany.

AUGUST 5TH.—Lord Kitchener appointed Secretary of State for War. H.M.S. *Amphion* struck a mine and foundered.

AUGUST 6TH.—House of Commons, in five minutes, passed a vote of credit for £100,000,000, and sanctioned an increase of the Army by 500,000 men. State control of food prices.

AUGUST 8TH.—Lord Kitchener issued a circular asking for 100,000 men.

AUGUST 9TH.—The enemy's submarine, U15, was sunk by H.M.S. *Birmingham*.

AUGUST 10TH.—France declared war on Austria-Hungary. Germans advanced on Namur. The new Press Bureau established by the Government for the issue of official war news.

AUGUST 11TH.—England declared war against Austria.

AUGUST 15TH.—The Tsar addressed a Proclamation to the Polish populations of Russia, Germany, and Austria, promising to restore to Poland complete autonomy and guarantees for religious liberty and the use of the Polish language.

AUGUST 16TH.—Japanese ultimatum to Germany demanding the withdrawal of her vessels of war from the Far East.

AUGUST 17TH.—The British Expeditionary Force safely landed in France.

The Belgian Government transferred from Brussels to Antwerp.

AUGUST 18TH.—General Sir H. Smith-Dorrien appointed to command of an Army Corps of the British Expeditionary Force, in succession to the late General Grierson.

AUGUST 20TH.—The Servians gained a decisive victory over the Austrians near Shabatz.

AUGUST 21ST.—The German forces entered Brussels.

AUGUST 22ND.—Serbia announced that their army had won a great victory on the Drina. The Austrian losses were very heavy.

AUGUST 23RD.—Japan declared war on Germany. The Russian army gained an important victory near Gumbinnen against a force of 160,000 Germans.

AUGUST 24TH.—It was announced that Namur had fallen.

The British forces were engaged all day on Sunday and after dark in the neighbourhood of Mons, and held their ground. Lunerville was occupied by the Germans.

AUGUST 27TH.—Mr. Churchill announced in the House that the German armed merchantman *Kaiser Wilhelm der Grosse* had been sunk by H.M.S. *Highflyer* on the West Africa Coast.

AUGUST 28TH.—A concerted operation was attempted against the Germans in the Heligoland Bight.

The First Light Cruiser Squadron sank the *Mainz*. The First Battle Cruiser Squadron sank one cruiser, *Köln* class, and another cruiser disappeared in the mist, heavily on fire, and in a sinking condition.

Two German destroyers were sunk and many damaged. The total British casualties amounted to sixty-nine killed and wounded.

Lord Kitchener announced that "The Government have decided that our Army in France shall be increased by two divisions and a cavalry division, besides other troops from India."

SEPTEMBER 1ST.—The Russians met with a check in East Prussia, but were successful in minor engagements in Galicia.

SEPTEMBER 2ND.—Continuous fighting was in progress along almost the whole line of battle. The British Cavalry engaged, with distinction, the Cavalry of the enemy, pushed them back, and captured ten guns. The French Army gained ground in the Lorraine region. The Russian Army completely routed four Austrian Army Corps near Lemberg, capturing 150 guns.

SEPTEMBER 3RD.—The French Government moved to Bordeaux.

SEPTEMBER 4TH.—The Russian Army under General Ruzsky captured Lemberg, and the Army of General Brusiloff took Halicz.

SEPTEMBER 5TH.—The formal alliance of England, France, and Russia was signed in London by the representatives of the three Governments concerned, binding each nation to conclude peace, or discuss terms of peace, only in conjunction with its Allies.

SEPTEMBER 6TH.—It was announced that the scout-cruiser *Pathfinder* foundered on Saturday afternoon after running upon a mine.

SEPTEMBER 7TH.—General Joffre's plans were being steadily carried out. The Allied forces acted on the defensive and were successful in checking and forcing back in a north-easterly direction the German forces opposed to them.

SEPTEMBER 8TH.—The Allies gained ground on the left wing along the line of the Ourcq and the Petit Morin river. Here the British troops drove the enemy back ten miles. Further to the right, from Vitry-le-François to Sermaise-le-Bains the enemy was pressed back in the direction of Rheims.

SEPTEMBER 9TH.—The English Army crossed the Marne, and the enemy retired about twenty-five miles.

SEPTEMBER 13TH.—On the left wing the enemy continued his retreating movement. The Belgian Army pushed forward a vigorous offensive to the south of Lierre.

SEPTEMBER 14TH.—All day the enemy stubbornly disputed the passage of the Aisne by our troops, but nearly all the crossings were secured by sunset. On our right and left the French troops were confronted with a similar task, in which they were successful.

SEPTEMBER 15TH.—The Allied troops occupied Rheims. Six hundred prisoners and twelve guns were captured by the Corps on the right of the British.

SEPTEMBER 16TH.—Submarine E9, Lieutenant-Commander Max Kennedy Horton, returned safely after having torpedoed the German submarine *U-15* south of Heligoland.

SEPTEMBER 19TH.—The Russian Army seized the fortified positions of Sieniawa and Sambor.

The British auxiliary cruiser *Carmania*, Captain Noel Grant, Royal Navy, sank the *Cap Trafalgar* off the east coast of South America. The action lasted one hour and forty-five minutes, when the German ship capsized and sunk, her survivors being rescued by an empty collier.

SEPTEMBER 22ND.—H.M. ships *Aboukir*, *Hogue*, and *Cressy* were sunk by submarines in the North Sea. The *Aboukir* was torpedoed, and whilst the *Hogue* and the *Cressy* had closed and were standing by to save the crew they were also torpedoed.

SEPTEMBER 23RD.—British aeroplanes of the Naval wing delivered an attack on the Zeppelin sheds at Düsseldorf and Flight-Lieutenant Collet dropped three bombs on a Zeppelin shed.

SEPTEMBER 27TH.—Between the Oise and the Somme and to the north of the Somme, the battle continued along a very extensive front with perceptible progress on our part. By the evening our troops regained the ground they had lost. Between the Argonne and the Meuse there was nothing new to report.

SEPTEMBER 28TH.—At certain points, notably between the Aisne and the Argonne, the enemy made further violent attacks, which were repulsed.

OCTOBER 1ST.—The arrival of the Indian Expeditionary Force at Marseilles was announced.

OCTOBER 2ND.—His Majesty's Government authorised a mine-laying policy in certain areas.

OCTOBER 5TH.—In Russia the German army, which was operating between the front of East Prussia and the Niemen, was beaten all along the line and retreated, abandoning a considerable quantity of material.

OCTOBER 9TH.—The British naval airmen carried out another successful raid on the Zeppelin sheds at Düsseldorf.

OCTOBER 10TH.—Death of King Carol of Roumania.

OCTOBER 11TH.—The Russian cruiser *Pallada* was sunk in the Baltic by a German submarine.

OCTOBER 14TH.—The Belgian Government removed from Ostend to Havre.

OCTOBER 15TH.—H.M.S. *Yarmouth* (Captain Henry L. Cochrane) sank the German liner *Markomania* off Sumatra, and captured the Greek steamer *Pontoporos*.

OCTOBER 16TH.—H.M.S. *Hawke* (Captain Hugh P. E. Williams, R.N.) was attacked and sunk by submarines.

OCTOBER 17TH.—The new light cruiser *Undaunted* (Captain Cecil H. Fox), accompanied by the destroyers *Lance* (Commander W. de M. Egerton), *Lennox* (Lieut. Commander C. R. Dane), *Legion* (Lieut. C. F. Allsop), and *Loyal* (Lieut. Commander F. Burges Watson), sunk four German destroyers off the Dutch coast.

OCTOBER 25TH.—A German submarine was rammed and sunk by the destroyer *Badger* (Commander Charles Fremantle, R.N.) off the Dutch coast.

OCTOBER 29TH.—Admiral H.S.H. Prince Louis of Battenberg resigned his position as First Sea Lord of the Admiralty.

OCTOBER 31ST.—H.M.S. *Hermes* was sunk by a torpedo fired by a German submarine in the Straits of Dover.

NOVEMBER 2ND.—The Admiralty declared the whole of the North Sea a military area.

NOVEMBER 4TH.—It was reported that the *Scharnhorst*, *Gneisenau*, *Leipzig*, *Dresden*, and *Nürnberg* concentrated near Valparaiso, and that an engagement was fought on November 1st. The *Monmouth* was sunk and the *Good Hope* very severely damaged. The *Glasgow* and the *Otranto* escaped.

NOVEMBER 5TH.—The German cruiser *Yorck* struck the mines blocking the entrance to Jable Bay and sank.

NOVEMBER 7TH.—The fall of Tsingtau was announced.

NOVEMBER 10TH.—The *Emden* was driven ashore and burnt at Keeling Cocos Island by H.M.A.S. *Sydney* (Captain John C. T. Glossop, R.N.). The *Königsberg* was imprisoned in the Rufiji Island by H.M.S. *Chatham*.

NOVEMBER 11TH.—H.M.S. *Niger* (Lieut. Commander Arthur P. Muir, R.N.) was torpedoed by a submarine in the Downs, and foundered.

NOVEMBER 14TH.—Field-Marshal Lord Roberts died at the Headquarters of the British Army in France.

NOVEMBER 23RD.—The German submarine *U18* was rammed by a British destroyer, the *Garry*, off the coast of Scotland.

NOVEMBER 26TH.—H.M.S. *Bulwark* blew up in Sheerness Harbour.

DECEMBER 8TH.—A British squadron under Vice-Admiral Sir Frederick Sturdee sighted off the Falkland Islands a German squadron consisting of the *Scharnhorst*, *Gneisenau*, *Nürnberg*, *Leipzig*, and *Dresden*. Three of these five warships were sunk, including the flagship of Admiral Count von Spee. The two others fled from the action and were pursued.

DECEMBER 9TH.—Valievo was retaken by the Serbians, who energetically pursued the Austrian forces.

DECEMBER 10TH.—A further telegram was received from Vice-Admiral Sir Frederick Sturdee reporting that the *Nürnberg* was also sunk on December 8.

DECEMBER 13TH.—Submarine *B11*, Lieut. Commander Norman D. Holbrook, R.N., entered the Dardanelles, and, in spite of the difficult current, dived under five rows of mines and torpedoed the Turkish battleship *Messudiyeh*, which was guarding the minefield. When last seen the *Messudiyeh* was sinking by the stern.

DECEMBER 16TH.—In the morning a German cruiser force made a demonstration upon the Yorkshire coast, in the course of which they shelled Hartlepool, Whitby, and Scarborough. They were engaged by the patrol vessels on the spot, and a British patrolling squadron endeavoured to cut them off. On being sighted by British vessels the Germans retired at full speed, and, favoured by the mist, succeeded in making good their escape.

DECEMBER 17TH.—Great Britain proclaimed Egypt a British Protectorate.

DECEMBER 24TH.—A German aeroplane dropped a bomb into a garden at Dover, doing no great damage and causing no casualties.

DECEMBER 25TH.—A German aeroplane flew over Sheerness. Pursued by three British machines and fired on by anti-aircraft guns it made off towards the East Coast.

British cruisers, destroyers, submarines and seaplanes made a combined raid on German warships lying in the roads off Cuxhaven. Our ships, while standing by to pick up the seaplanes, were themselves attacked by enemy Zeppelins, seaplanes, and submarines. They beat off the attack and succeeded in picking up three out of the seven airmen with their machines. Three other pilots who returned later were picked up, according to arrangement, by British submarines, which were standing by, their machines being sunk. The extent of the damage by the British airmen's bombs cannot be estimated, but all were discharged on points of military significance.

JANUARY 19TH.—German aircraft raided the East Coast in the evening and dropped bombs on Yarmouth.

JANUARY 24TH.—Early in the morning a British patrolling squadron sighted three German battle-cruisers and an armoured cruiser, the *Blücher*, steering westwards. The German warships turned and made for home, but were brought to action. The *Blücher* was sunk, and two other German battle-cruisers were seriously damaged.

JANUARY 26TH.—On the Yser front Belgian troops made progress in the Pervyse district.

Near La Bassée, at Givenchy and Cuinchy, the enemy delivered five attacks on the British lines. After having made slight progress the Germans were driven back.

JANUARY 27TH.—In the region of Perthes, on Hill 200, four violent attacks by the enemy were repulsed.

At St. Mihiel we destroyed the new pontoon bridges of the enemy on the Meuse.

JANUARY 28TH.—In the Vosges we made appreciable progress to the north of Senones, on the slopes of the Signal de la Mère Henry.

We also progressed in Alsace in the region of Ammertzwiller-Burnhaupt Le Bas.

JANUARY 29TH.—In Belgium, in the region of Nieuport, our infantry gained a footing in the Great Dune. A German aircraft was brought down by our guns.

JANUARY 30TH.—Before Cuinchy, near La Bassée, the British Army repulsed the attack of three German battalions.

JANUARY 31ST.—In the sectors of Arras, Roye, Soissons, Reims, and Perthes our batteries destroyed two of the enemy's guns, several works, and a certain number of mortars, and dispersed several concentrations of troops, bivouacs and convoys.

FEBRUARY 1ST.—The enemy violently attacked our trenches to the north of La Bassée-Bethune road. He was repulsed, and left numerous dead on the ground.

FEBRUARY 2ND.—The Turks attempted to cross the Suez Canal near Tussum.

They were allowed to bring their bridging material to the bank unmolested. When the bridging operations had actually started we attacked them. Our attack was completely successful. The enemy fled in disorder, leaving the whole of the bridging material in our hands, and some of the enemy were drowned in the Canal.

The enemy also attacked us on the El Kantara front, but were easily repulsed.

FEBRUARY 4TH.—In the district of Albert and Quesnoy-en-Santerre we destroyed several blockhouses.

In the Woivre, in the valley of the Seille, we obtained advanced post successes and scattered some of the enemy's convoys.

FEBRUARY 5TH.—In Champagne, north of Beauséjour, our troops made slight progress during the night.

FEBRUARY 7TH.—Between the Canal and the Béthune-La Bassée road, at a point one kilometre to the east of Cuinchy, a brickfield, where the enemy had maintained himself up to the present, was captured by the British.

FEBRUARY 8TH.—To the south-west of Carency we made a successful coup de main on a German trench, which was wrecked by a mine, and the defenders of which were killed or captured.

To the west of Hill 191, to the north of Massiges, our batteries checked an attempt to make an attack.

A DIARY OF THE WAR DAY BY DAY.

TUESDAY, FEBRUARY 9th.

The enemy bombarded Soissons, Furnes, and Ypres.

In the Black Sea Russian cruisers bombarded a Turkish battery near Trebizond and sank a steamer with her cargo, and the Turkish cruiser *Breslau* bombarded Yalta.

The *Wilhelmina*, the United States ship laden with food for Germany, arrived at Falmouth.

WEDNESDAY, FEBRUARY 10th.

In the West insignificant encounters mainly confined to artillery firing and throwing of bombs.

In the East the Germans lost tens of thousands of men during their six days' attack on the left bank of the Vistula.

THURSDAY, FEBRUARY 11th.

German forces amounting to about a brigade made an attack on the Marie Thérèse works in the Argonne.

The enemy delivered a violent bombardment against Nieuport and the banks of the Yser.

The Russians fell back from the line of the Masurian Lakes towards their frontier.

FRIDAY, FEBRUARY 12th.

Thirty-four British aeroplanes and seaplanes made a raid on the Belgian coast; considerable damage was done to the enemy's bases and establishments.

Flight-Commander Grahame-White fell into the sea off Nieuport, but was rescued.

An attack by the enemy in the direction of Arracourt was repulsed.

In the Vosges French Chasseurs carried Hill 937 with insignificant losses.

SATURDAY, FEBRUARY 13th.

In Belgium there were some artillery duels.

At La Boisselle we exploded a mine and occupied the cavity.

The enemy bombarded the villages of Bailly and Tracy-le-Vaz. The heavy artillery reached the railway station of Neyon.

SUNDAY, FEBRUARY 14th.

There were artillery duels in Belgium between the Oise and the Aisne, and in Champagne. In Lorraine, in the region of Pont-à-Mousson, we delivered a counter-attack against the enemy, who had occupied Norroy, and who had gained a footing on the adjacent height. The fight continued.

MONDAY, FEBRUARY 15th.

We carried about 250 mètres of a trench between Béthune and La Bassée. In the Argonne, in the direction of Bagatelle and Marie Thérèse, the struggle continued very stubbornly from trench to trench.

In Lorraine the enemy succeeded in occupying the height of the Xon Beacon and the hamlet of Norroy. He was repulsed by a counter-attack as far as the slopes north of the beacon, where he still maintained himself in some portions of trenches.

CORRESPONDENCE.

We are receiving daily numerous letters from our readers dealing with the military and naval situation, also suggestions regarding inventions. It is only possible in these columns to reply to a few of them, but we take this opportunity of assuring our correspondents that the subject matter of their letters are carefully dealt with and forwarded to experts.

THE MAN IN THE STREET.

To the Editor of LAND AND WATER.

SIR,—In your last issue a "Coast-dweller in Cornwall" took upon himself to pose as the "Man in the Street," and in that capacity to indulge in a violent diatribe against Mr. Churchill.

It might be interesting to learn on what grounds the gentleman in the neighbourhood of Land's End claims to be the mouthpiece of public opinion, but as "an individual in a neighbouring by-way" I should like to protest against his assumption of the title on this occasion, not because I think that Mr. Churchill may be perturbed by such condemnation, but because I have a feeling of sympathy for the "Man in the Street."

The "Man in the Street" has a sense of justice, and regards with repugnance the idea of condemning a man unheard on the basis of rumours and suppositions. He does not desire to condemn Mr. Churchill until the facts are known and any charges against him proved. If Mr. Churchill has made mistakes (is it not a privilege even of greatness?) he

will have to face fair and straightforward criticism when those mistakes are proved; but may we be preserved at such times as these from the carping criticisms of the armchair type? Would the "Man in the Street" look with favour on the insinuation that "the 'Formidable' disaster was probably owing to Mr. Churchill's defiance of naval advice, and in his belief that he is a second Nelson"? "Probably," forsooth! Does that word convey the impression of fair criticism?

Incidentally, I may mention that many men in many London streets have given Mr. Churchill the credit for the mobilisation and readiness of the Navy at the beginning of August, and in consequence he was, and in my opinion is still, a favourite in the eyes of the public.

I might also mention that there was a successful raid made by naval aeroplanes last week. Perhaps, if any aeroplanes had been lost, their loss would be due to Mr. Churchill's belief that he is a second Blériot!

I do not desire to put myself forward in opposition as the "Man in the Street," and I therefore sign myself,—Yours, etc.,
A LANDEUBBER IN AN ALLEY.

CRITICISING THE ADMIRALTY.

To the Editor of LAND AND WATER.

SIR.—Mr. Jane's comments upon my letter in current issue are so elusive and wide of the mark as to render further correspondence nugatory, but I crave permission to state distinctly that Mr. Jane has all along refrained from and deprecated criticism of the Admiralty, and, further, that many of us were under the impression that "a feeling of ease and security in the civil population" was one of the results to be expected from the presence of our North Sea fleet!—Yours truly,

E. H.

Hatch End.

To the Editor of LAND AND WATER.

DEAR SIR,—I am quite in agreement with your correspondent, "E. H.," who contends that "withholding of frank criticism of our Admiralty and other departments would be harmful," but a criticism to be of value should be entered upon with a full knowledge of the points criticised. The very fact that your contributor speaks of "repeated successful demonstrations by the enemy on our East Coast" proves both that he has only a surface knowledge of the incidents, and also that the East Coast folk who are better informed are, like Brer Rabbit, "lying low and saying nuffin."

As an East Coast resident, let me assure "E. H." that no feeling of "insecurity and uneasiness" exists among the East Coast people as a whole. We are taking our risks with the rest of our countrymen, and are quite convinced that, while Fisher, Scott, Wilson, Jellicoe, etc., remain at their respective posts, there will be very little call for a layman's criticism.

Let our friend ask the first Jack Tar he meets on leave how things are going. He won't be told anything, but the broad grin that will develop on Jack's face should reassure him.

P.

THE LINE OF THE RHINE.

To the Editor of LAND AND WATER.

SIR,—May I call attention to what would appear to be a flaw in Mr. Belloc's otherwise cogent reasoning in his all-important argument in regard to holding and falling back to second, or third, defensive lines. Throughout he assumes in each illustration, though he omits to say so, that the physical characteristics or natural strength of each alternative position is equal—the only factor he deals with being the comparative length of each. When he applies his reasoning to the several lines 1, 1, 1, 1, "the present"—2, 2, 2, 2, "Antwerp, Namur, Metz, Swiss frontier"—3, 3, 3, 3, "Liège, Metz, Swiss frontier," and finally to "the line of the Rhine," he lightly dismisses the latter as negligible on account of its greater length.

It is true he refers to German political essentials in this connection, but it is to be remembered that they have already undergone considerable modifications, and, it is to be hoped, will have to submit to further ones.

I devoutly trust I am mistaken, but the natural strength of the line of the Rhine, backed as it is by numerous parallel railways, has always appeared to be one that might well be effectively held by a relatively smaller force, and certainly by a much smaller one than now opposed to us in the west.—Yours obediently,

S. ARTHUR PETO.

Downs Court, Sandwich, Kent.

MOTORS AND AIR RAIDS.

To the Editor of LAND AND WATER.

SIR,—Through the agency of your interesting paper, would it be possible to collect a number of owners of motor-cars or motor-cycles who could be issued with rifles and specially-prepared ammunition as recommended by your correspondent, Mr. Arthur Beckett, in your issue of January 9.

Since his letter was written Zeppelins have visited this country, and so far as we know returned to Germany without injury.

These pests may come again any calm night, and it is clearly time to find an antidote in any part of the country. Should one of these phosphorous bullets ignite the gas in a Zeppelin balloon, as Mr. Beckett claims, I venture to say the destruction of one or two with their crews would prevent our German friends again favouring us with their attention.

The owner of a car or cycle would have the advantage of local knowledge, and could choose his own site from which to attack.

Mr. Beckett's remark on the advisability of a small bore

weapon being used is sound, and the danger of causing fires could not be too carefully impressed on the users.—Yours faithfully,

FRANCIS SAUNDERS,

Lieutenant Commander.

[N.B.—It is highly improbable that the War Office would permit any unauthorised body of men to form such a corps as suggested by the writer.—EDITOR.]

HARDENING HORSES.

To the Editor of LAND AND WATER.

SIR,—After years of practical experience in handling horses, especially in America, I am concerned to note that numbers gathered for our New Army have been lost through being picketed out unsheltered in exposed situations.

Of course, for campaigning horses must get used to exposure, but that should be a gradual process. They should in no case be out in winter weather without wind breaks, if there are no natural ones, such as woods or banks. Wet does not hurt a horse with a winter coat on, but draught and cold do; and to tie a horse out in an exposed situation without wind-breaks or natural shelter is absolute murder.

I see that a number have died of what is called "rug pneumonia," caused by their being supplied with rugs that get wet through and are not dried off. If, however, the horses were provided with wool-lined tarpaulin cloths, such as are used for dray horses, these would be cheap and effective in keeping their backs dry and turning the wind. In New Zealand, work horses are not stabled, but, after being rubbed dry and fed, are turned out with waterproof rugs on. Of course, the trouble in campaigning would be to carry the rugs along, but this would be amply repaid by the horses saved.

In W. Virginia, our horses ran out in rain, snow and sleet, but had always shelter to go to. We never lost one from pneumonia, but if under the same conditions they had been tied up in exposed places, they would have died. To leave sick horses in the open is a scandal; no colonial would make such mistakes.—Faithfully yours,

COLONIAL.

THE GERMAN LOSSES.

To the Editor of LAND AND WATER.

DEAR SIR,—Mr. Belloc this week makes an interesting calculation of the total German losses up to date. This calculation is based upon the assumption that the Germans do not include in their lists the numbers of those lightly wounded.

This assumption, however, is not correct. During a long period of captivity in the enemy's country, one of my few pastimes was the ghoulis one of poring over the endless *Verlustlisten*; after each name was given one of the following categories: *leicht verwundet*, *verwundet*, *schwer verwundet*, *schwer verletzt*, *vermisst*, *gefangen*, or *tot*. Of these *leicht verwundet* appeared oftener than any other category but *verwundet*. I have still in my possession a *Verlustlist*, in which eighty out of a total of 420 casualties are specifically given as "*leicht verwundet*."—Yours faithfully,

2, Savoy Hill, W.C.

C. J. THOMAS, M.B., B.Sc.

THE SAILORS AND SOLDIERS' TOBACCO FUND.

To the Editor of LAND AND WATER.

DEAR SIR,—We shall be extremely grateful if you will permit me to use your valuable paper as a medium for an appeal on behalf of the above Fund.

The need of tobacco and pipes for our soldiers and sailors is very urgent, and we shall welcome any donation, either in money or kind, that will enable us to remove this want. It is true that there are several other Funds opened to this end, but when it is realised that to supply every man with only half an ounce of tobacco each (a modest estimate of one day's requirements) nearly 28 tons of tobacco are needed, it will be realised that the fear of any overlapping is almost superfluous.

Anyone desiring to help the Fund can do so by (1) subscribing direct; (2) taking a collection box; (3) organising an entertainment or concert. Cheques, postal orders, etc., should be made payable to Mr. Roy Horniman, hon. treasurer, and crossed "Barclay's Bank." Should any of your many readers be interested and would like further particulars of the Fund, I should be most happy to answer any inquiries.—Your obedient servant,

W. EVAN COLLISON.

Central House, Kingsway, W.C.

HOSTILE SUBMARINES.

To the Editor of LAND AND WATER.

DEAR SIR,—With regard to the threatened attack on our Mercantile Marine by German submarines with the intention of blocking our ports and stopping our overseas trade, it has occurred to me that an effective way of

dealing with this would be to anchor deeply-sunk mines right on trade routes, some distance from such ports as Liverpool, the Bristol Channel, the Clyde, the Thames, or Belfast.

If a field of these mines were moored at a depth of, say, 40-50 feet from the surface, and 10 or 15 miles from the entrance to the ports, I think it would greatly hamper the movements of hostile submarines. If they went below they would run the risk of contact with the mines, and if they remained on the surface a destroyer could deal with them. I think the knowledge that the mines were there would tend to keep them on the surface and make them more easily got at.

If the mines were securely moored at a sufficient depth, they would be no danger to passing ships, and would still be near enough the surface to catch a submarine running submerged; and, if a suitable depth of water were chosen, they would still be near enough the bottom as to make it dangerous for submarines to pass under them.—Yours truly,
CHAS. E. ALLAN.

A USE FOR BEER BARRELS.

To the Editor of LAND AND WATER.

SIR,—The Germans sink our merchant ships by torpedoes from submarines. Let us procure a dozen old merchant steamers, give them cargoes of empty beer-barrels bunged and well packed, and roped together, and send them to and from the estuary of the Thames to the entrance of Rotterdam, with an inviting-looking deck cargo hiding a 4-inch gun. Such boats could not be sunk by one torpedo, or by two, and the 4-inch gun would suffice to sink any submarine that discovered herself for the purpose of challenging.—Yours truly,
R. W. WESTERN.

Authors' Club, 2, Whitehall Court, S.W.

To the Editor of LAND AND WATER.

DEAR SIR,—In a recent issue Mr. Arthur Beckett describes a bullet for the destruction of Zeppelins. One grave objection to these is the fact that they must be kept under water, which can only be conveniently done at fixed stations, where anti-aircraft guns would be more efficient; in addition, a hole in the point of a modern bullet containing a gradually-diminishing weight would materially affect the ballistics.

Experiment has shown that when flaming bullets are fired against hydrogen bags enclosed in an external envelope the number of actual ignitions of the hydrogen is very small, possibly due to the vacuum caused at the moment of impact.—Yours very truly,
KENNETH GOADBY.
46, Harley Street.

THE CHINA STATION.

To the Editor of LAND AND WATER.

SIR,—In that portion of your article appearing in a recent number of LAND AND WATER under heading "The High Seas Generally" your correspondent, Mr. Jane, states:—"Von Spee, with the *Scharnhorst* and *Gneisenau*, belonged to the China Station. Here we maintained a force sufficient to deal with Von Spee."

Being one among the many "others" (along with Lord Selborne) who venture to criticise the Admiralty, may I ask why this "sufficient force" allowed Von Spee to escape from Kiao-Chau? Obviously, if our force there had been "sufficient" Von Spee would never have reached the Pacific, and the nation would have not been deprived of the gallant Admiral Cradock and the many brave seamen. Many of your readers would be glad to know what our "force" is on the China Station, and would be equally gratified to learn when, and by whose order, the *Canopus* was sent to reinforce Admiral Cradock's fleet. The British people, after all, pay for the Fleet, in cash as well as in tears, and the Admiralty is committing a grave fault in concealing these particulars.—Yours faithfully,
A. L.

THE QUESTION OF NUMBERS.

To the Editor of LAND AND WATER.

SIR,—In estimating the total forces which Germany can put into the field, there is one important difference between the two schools which Mr. Belloc has omitted to mention. He himself starts with men of twenty years of age, but the other school expects Germany to put into the field at least a million youths below that age. Though not the best of troops, they would be by no means negligible.—Yours faithfully,
HENRY BURY.

CHOOSING KIT!

To the Editor of LAND AND WATER.

DEAR SIR,—Some time ago you were kind enough to supply me with the addresses of the makers of certain articles recommended in your paper. I have got them, and find them all excellent.

I would like to trespass again on your time, and would be very much obliged if you could tell me the maker of the water-bottle mentioned in your issue of January 2, and also let me know where I could obtain the saddlebag described in your number of January 9.

Thanking you in anticipation.—I am, yours truly,
A. V. T. ROBINSON
(Captain, R.E.).
6, York Terrace, The Lines, Gillingham, Kent.

THE BLOCKADE.

To the Editor of LAND AND WATER.

DEAR SIR,—With reference to the threatened submarine blockade and your articles in LAND AND WATER. Should not our Government and the French Government henceforth intern their prisoners of war on board ships and duly notify the German Government that these vessels might possibly have an occasional cruise round our coasts?—Yours, faithfully,
ALBERT E. BURNS.

A COMPARISON.

To the Editor of LAND AND WATER.

DEAR SIR,—I have read each week, with very great pleasure, Mr. Belloc's articles in your valued paper. In his description of the Battle of the Caucasus, in the issue of January 16, however, he makes a statement to which I find it difficult to give credence. He says that "in order to effect an envelopment of this kind the Germans had to count on a numerical superiority of their ally's troops in this region, for you cannot thus hold in one place and turn in another, unless you are numerically superior to your enemy." I give one example which seems to me to disprove this. At the battle of Chancellorsville in 1863 Lee, with 62,000 men, divided his force, sending part under Stonewall Jackson to turn Hooker's right, whilst he, with the remainder of his army, held him in play along his front. Hooker's total force was 130,000 men. Surely that is an example of such a thing being done, not by numerical superiority, but by astounding numerical inferiority. And the world knows the great victory then won by the Confederates, and the price they paid for it through the death of Stonewall Jackson.—Yours faithfully,
NORMAN BRUCE.

Nairnside,
Bearsden, Dumbartonshire.

THE FIRST LORD.

To the Editor of LAND AND WATER.

SIR,—I expect there will be many to answer your correspondent, the "Coast-dweller in Cornwall," but I should like you to allow me to point out two matters to him. First, if he blames Mr. Churchill for our defeats, he must praise him for our victories. The other matter is that it is not a good plan to change horses when you are crossing a stream.

I am not concerned to defend the First Lord—if he is a Nelson, his family history would warrant it—nor do I carp at your correspondent's use of the word "civilian." In his sense, I almost think Julius Cæsar would have been a civilian.

I am sorry for him if he does not realise that a good deal of "autocracy" power is in vogue in the Navy.—Yours sincerely,
M. GARDNER.

Farm Corner, Tadworth, Surrey.

MR. BELLOC will lecture at Chester at 3 p.m. on Friday, February 19th, and at Hove Town Hall at 3 p.m. and 8.30 p.m. on Tuesday, February 23rd. Mr. Fred T. Jane will lecture on the Naval War at Queen's Hall at 8.30 Friday, February 26th. Professor Lewes will lecture on Modern Explosives at Queen's Hall at 8.30 Tuesday, March 2nd.

NOTICE TO READERS.

Next week's issue will contain an article by Mr. Belloc on "THE DURATION OF THE WAR."

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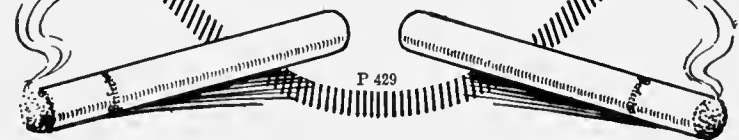
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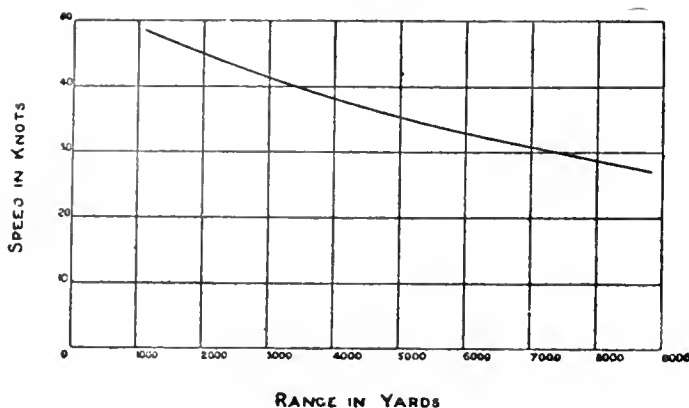
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THE TORPEDO

(Continued from page 295)



use of heated air in the engine. The air as it issues from the reservoir is heated in a small steel chamber by means of a small liquid fuel burner, and this "superheated" air is delivered to the engine. The application of heat considerably increases the quantity of energy available, and the distance through which the torpedo can be driven is thereby greatly increased.

Torpedoes are fired into the sea either from above or below the surface of the water, and are expelled from the tubes either by compressed air or a small charge of powder. As the torpedo carries its own power, only a force sufficient to throw the torpedo clear of the ship is required. When a torpedo is fired from a deck tube and strikes the water it immediately dives to the depth (generally about 12 feet) at which it is intended to run.

It is now recognised that the submerged torpedo tube is the best for firing torpedoes, as it is much safer from the enemy's gun fire, and also because a more accurate course can be set, since when dropping from the deck into the water the torpedo is bound to be deflected to some extent.

When firing a torpedo under water from a moving ship a steel bar is pushed out from the ship's side, so that the torpedo is protected from the rush of water along the hull of the ship, which otherwise would drag the torpedo out of its course. In some ships this bar is moved out before the torpedo is fired, while in others it shoots out automatically the moment of the firing of the torpedo and returns again when the tube is clear.

A torpedo tube consists of a cylindrical vessel fitted in the bow or stern, or in both, as the case may be. One end projects a small distance beyond the vessel and is fitted with a sluice valve, so that the water cannot enter the ship. Suitable safety devices are provided, so that the torpedo can only be fired when the sluice valve is open. The torpedo is pushed into the tube from the inside end just as a shell into the breech of a gun.

A firing director is provided so that the torpedo can be fired at the right moment. It is a difficult matter to fire a torpedo so that it will hit the object aimed at, as allowances must be made for the speed and direction of the two opposing vessels and the time necessary for the torpedo to cover the distance between the ships. In a running action between torpedo boats and battleships only some 20 to 30 per cent. of the torpedoes fired are expected to hit. As a modern torpedo costs from £600 to £1,200, unsuccessful torpedo attacks are a pretty expensive form of warfare.

Attempts have been made to use electric waves such as are used in wireless telegraphy to control the direction of a torpedo after it has been fired, but up to the present these inventions have not yet passed the experimental stage.

The only real defence against torpedoes is gunfire against the craft carrying them. Against the torpedo itself there is no real defence except trying to get out of the way by smart manœuvring. Until the advent of the submarine, a torpedo craft approaching a vessel could be seen in daylight, and was either destroyed or put to flight. In those days only the night attacks were likely to succeed. But the submarine is practically invisible, both by day and night, hence the great opportunity of a successful torpedo attack and the difficulty of destroying the submarine.

If a ship is at anchor the torpedo net is employed. It is a steel net suspended from booms from the ship's side. The distance between the ship and the net must be such that, when a torpedo strikes the net and explodes, the water can shatter the force of the explosion.

It is doubtful whether a net is a sufficient safeguard against modern torpedoes fitted with a net-cutting device. These torpedoes are capable, under favourable conditions, of

piercing wire nets and leaving a hole large enough for the torpedo to go through.

The subdivision of modern battleships and cruisers into several watertight compartments, so that when hit by a torpedo it can still float and probably be saved, can hardly be considered as a defence.

There is great scope for naval engineers to discover a method by which torpedoes and submarines can be detected at a distance, so that there is time for the ship to get out of the way. Perhaps it is also possible to devise apparatus capable of altering the direction of hostile torpedoes after having been fired by the enemy.

WAR PUBLICATIONS

IT is interesting to note that the management of "Colour," the successful and artistic shilling monthly, has arranged a second art competition for subscribers, entrance to which includes an exhibition of the competing pictures at a London gallery. The last number of "Colour," by the way, is well up to the general standard set in earlier issues, and the frontispiece especially—"The Green Parrot"—is a fine piece of reproduction in colour work. Both in its artistic and literary items "Colour" is of such a high level of work as to give it a leading place among periodicals of the day.

Messrs. Williams and Norgate's "Home University Library" includes two volumes by Mr. Hilaire Belloc which are of exceptional interest at the present time. Of these one is the "French Revolution," a critical study of the great upheaval with which the eighteenth century ended, and one which enables us to realise the chief personages of the great drama, since the work is free of the sentimentality which characterises so many of the studies of this period and deals in realities. The other volume, "Warfare in England," is a brief outline of the various wars which have been fought out on British soil, from the Roman Conquest to the last Scottish wars. The initial chapter on strategical topography is an illuminating lesson in the art of war.

Messrs. John Murray have just issued a shilling edition of Professor Cramb's "Germany and England," which, reviewed in these columns some time ago, has proved one of the most popular books on the causes of the war—as it is one of the sanest of treatises on the subject.

In "The Origins and Destiny of Imperial Britain," published at 5s. by Messrs. John Murray, Professor Cramb has been at pains to trace the growth of Imperialism, "whether conscious or unconscious, from the earliest times." It is not a book to be read lightly, but an earnest study of British destiny, and its author's conclusion, that "the purple fringe of another dawn is on the horizon," embodies the feeling that is gained by a careful perusal of the work. We recommend it as a worthy text-book for students of the highest forms of Imperialism.

In "Echoes from the Fleet" (Williams and Norgate, 2s. net) Mr. L. Cope Cornford has embodied a number of sketches and stories of the Navy of to-day. All are worth reading, and some are very good indeed; the book as a whole is of such quality that Lord Charles Beresford describes it as "a valuable contribution towards a better understanding of the Royal Navy." Such appreciation, from such an authority, renders criticism on the part of a landsman superfluous. Apart from the technical value of the book it contains some very good stories. We need say no more.

"Battle," by Haldane Macfall, published by Messrs. Simpkin, Marshall & Co., is a well-compiled work describing the work of an army. In these days, when those who cannot fight are thinking and commenting on war, it is a very useful little volume, and we commend it to the notice of those who wish to understand more clearly the way in which armies perform their tasks.

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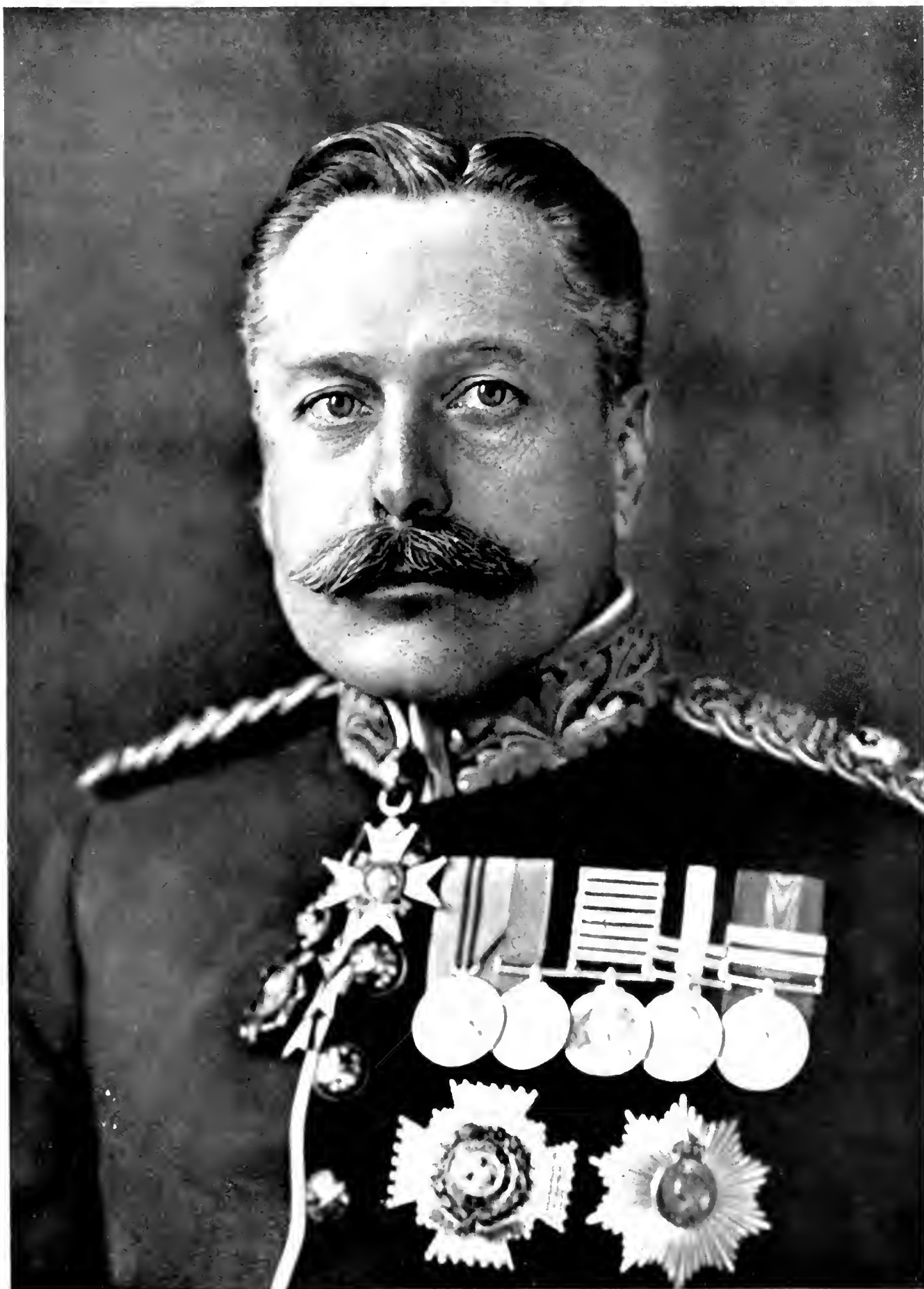
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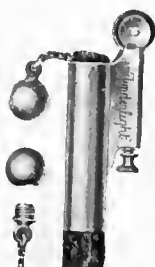
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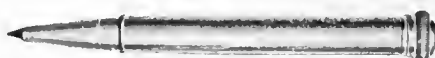
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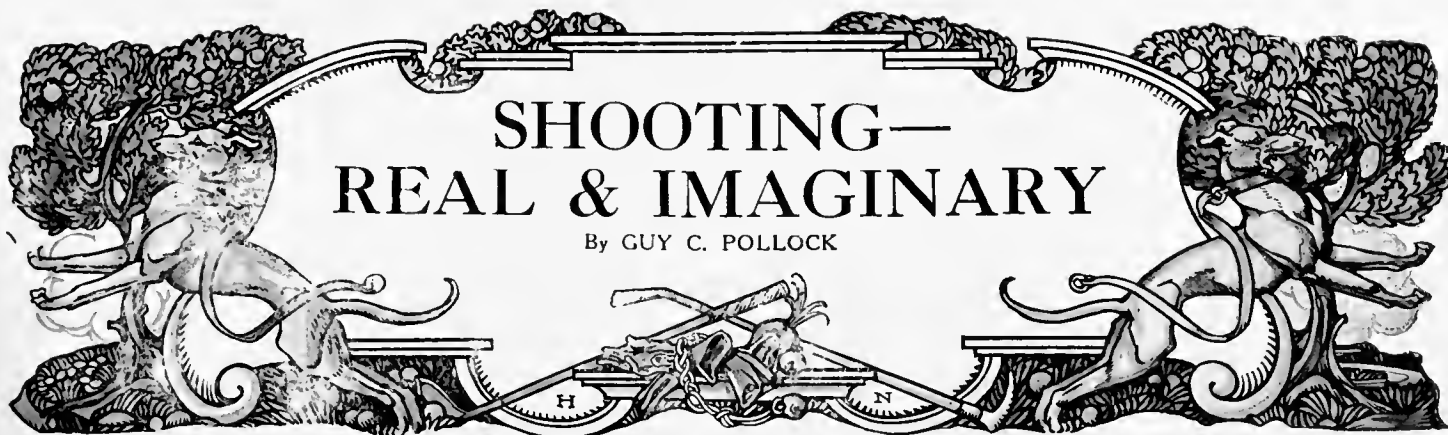
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By GUY C. POLLOCK

I AM not yet, I regret to say, in such a case that much learning has made me mad. But it becomes daily more apparent to me that continual study of military experts—not excluding the notorious Bernhardt who, I sincerely trust, is likely to draw no royalties for the extraordinary sale of his candid and unprincipled volume—has thoroughly fogged such intelligence as once I boasted. It has been my lot not only to read the military experts but to talk to some of them and to take counsel with them; and I refer now not to such military experts as you and I, who could teach General Joffre and Sir John French and Admiral Jellicoe their business, but to the *pukka* experts whose qualifications give them authority for the daily instruction of a hitherto unmilitary nation in the colossal art of war.

Rightly or wrongly, I draw certain inferences from the doctrine of these men; and I find that it may be applied to the inglorious sport of game shooting, in which some few of us, because military authority sets up such humiliating standards of age and physical fitness for martial occupation, are still engaged at less frequent intervals than was formerly the case. One of these inferences is that large flanking movements are the essence of both strategy and tactics. Another is that the success of such movements presupposes a quite sufficient force of all arms, combined with an excellent accuracy of fire and a perfect fire control.

Unfortunately, the special constable and myself were compelled to disregard these axioms when we endeavoured to destroy the enemy force of partridges with a ludicrously inadequate army. It so happened that the old soldier was compelled to fail us at the last moment. His defection was only made known to us when we reached the platform. If we had remembered our military experts we should, perhaps, have withdrawn our force in safety without risking disaster. But one beater and one black dog awaited us at the wayside station, and the day was very fine. So we pursued our enterprise, filling the train journey with much talk of our country and with gloomy suspicions of a supposed German spy in a corner of the carriage—who turned out a private of the new army.

All the morning, then, we pursued our partridges with indifferent success. An unusual drought—which would have been so valuable to the good fellows who are saving our skins for us in trenches often half full of water—had made these birds uncommonly suspicious of human approach now become particularly audible on the baked stubbles and through the languishing root fields. Our line of three, even when reinforced by half a beater in the shape of a small boy, could not cope with the tactical situation. If we extended to a hundred paces the coveys rose in the gaps of the line and flew away unpursued by shot—until we became so chagrined that we fired absurdly long shots, with the sole result of frightening the birds into more protracted flight. If we closed on the centre and took the few fields of good cover in narrow strips the coveys rose far away on the unguarded flank. Besides, a little of this sort of sport goes a good long way. To divide a ten-acre field of mangolds into three sections, and to take each section against the wind across the drills, retracing one's tired steps between each section, is well enough when three guns, knowing that two or three coveys are in the field, have a reasoned hope of getting so near them that every gun may come into action. But when two guns, with a beater and a half, aided by a wilful black dog, divide ten acres of mangolds into five sections, doubtful whether any coveys are actually in the field, and morally certain that if so they will rise out of shot, one consequence is certain. That consequence is that they compound with strategy, abandon the retraction of tired steps, blunder over the field in the easiest way, and are so surprised when a close-lying covey does rise that they miss with all four barrels.

That was, more or less, the first four hours of the day. Fortified by tea, the partridges were found in an unexpectedly kindly mood. All the familiar coveys were on the ground—without any too visible ravages by our former batteries. All waited for us in roots or on stubbles. Most got away without paying anything like the toll that should have been exacted. Not for the first time nor, probably, for the last I have entered—in small, shy letters—in the game-book “shooting abominable.” But it was a glorious late September evening, and we cheered the chief beater by talking to him of Zeppelin raids and telling him that, after all, his brother (somewhere on the River Aisne) might not have a family monopoly of the unnerving excitements of explosives.

But there is yet another inference to be drawn, I think, from the military experts and their literature. That is that anticipation is the most important thing of all. The number and the variety of military anticipations would appal me if I were to consider them in cold blood. And anticipation has a fierce satisfaction utterly denied to the prosaic fact with which it so seldom corresponds. I shall therefore anticipate the doings of three whole guns on the little shoot when, not too late in October, we snatch, if it so may be, three more days from the wreckage of an annual holiday.

First for the total bag in modest figures. It shall be fifteen brace of partridges, twenty-eight pheasants, three hares, and thirty-five rabbits, with one duck, two plover, and five pigeons to add a pleasant variety. We are to shoot with the accuracy reserved for our best days. We are to find the withy bed full of pheasants, of which several—let me be candid—are to escape by the back door. In Kilkenny Copse—you see how frank my imagination is—we are to suffer a reverse. An unfortunate lapse on the part of the black dog, who will there run in, despite all oburgations, and set up a premature flush of birds, and some confusion on the part of the guns will help several of these birds to go scot free. But when we come to Ashwales we shall deal very faithfully with its eleven pheasants, killing ten of them with a mortal precision of fire. Then shall be accomplished by one of us the two agreeable feats of a high pheasant and a hare to two barrels, followed as soon as the new cartridges are in by a right and left out of the covey of partridges which bursts suddenly and attractively out of the shelter of the bottom hedgerow. And on one of the other days we are to find our partridges in that most curiously submissive and quiescent mood which surprises the shooter at intervals throughout the season, so that we make hay of them while the sun shines, and are amply rewarded for march and countermarch.

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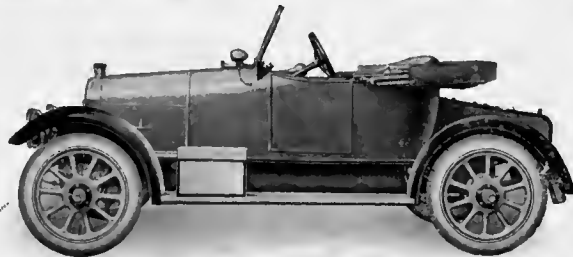
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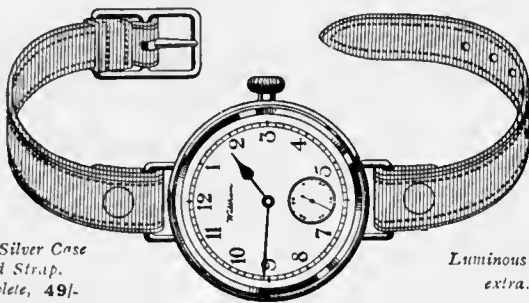
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THE WAR BY LAND.

By HILAIRE BELLOC.

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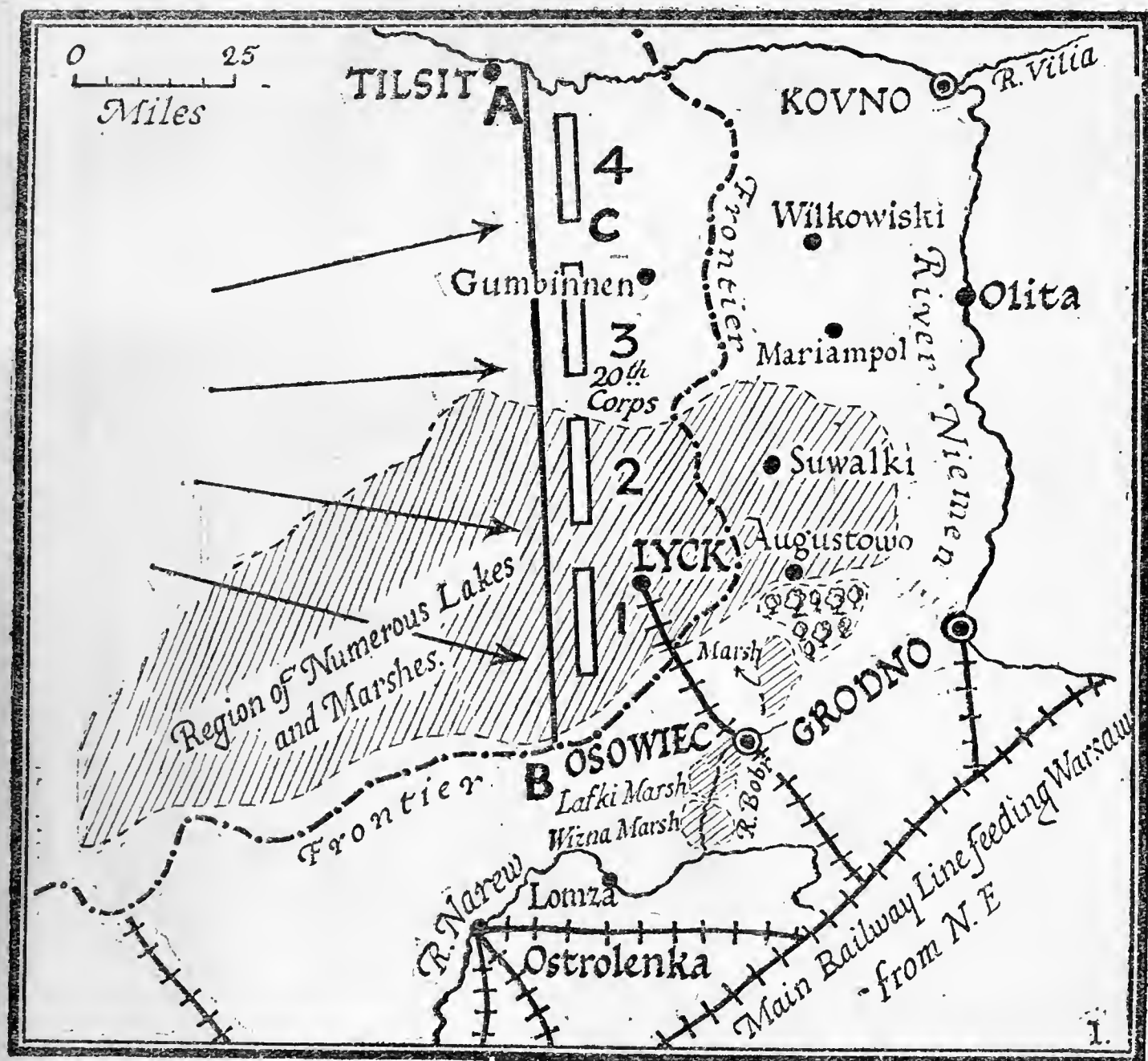
In accordance with the requirements of the Press Bureau, the positions of troops on Plans illustrating this Article must only be regarded as approximate, and no definite strength at any point is indicated.

THE EAST PRUSSIAN FRONT.

WHAT has happened upon the East Prussian frontier in the course of the last fortnight is now perfectly clear, and we must seize its details before we proceed to its meaning.

Upon February 7th, just after the great effort in front of Warsaw had failed, with very

made against the Rawka line in the first week of the month was extremely serious, very expensive, and only just failed of success. But whether it were a feint or no, it was during its progress that the German troops, already pressing in East Prussia, were joined by the new formations, the importance of which will be discussed in a moment, and that the clearing of the invaded province was begun. The belt of East Prussia



heavy losses to the enemy, the concentration of German troops in East Prussia was complete and the advance against the Russian invaders taken.

Some have conjectured that the great attack upon Warsaw from February 2nd to February 8th was no more than a diversion, with the object of withdrawing the Russian attention from the blow which was about to fall in the North. This conception is a little far-fetched. The effort

which our Allies had occupied and completely denuded of supplies, as against their necessary retreat (for, as has been repeatedly pointed out in these columns, the Russian equipped numbers are not yet sufficient for an outer advance upon either wing) had reached the river, the line A B in the above map. The Russian forces in this district amounted to no more than four army corps—say, after the waste of war, 130,000 to

150,000 men, and these four army corps we will indicate upon the sketch (purely diagrammatically, of course) by the figures 1, 2, 3, 4. Against this force there appeared upon the whole line from Tilsit to the Southern frontier anything from 300,000 to 500,000 Germans, who made it their task to clear Prussian territory of the enemy and to advance upon the line of the Niemen and the Narew.

Let it here be pointed out that upon four separate occasions the Russians have been suddenly attacked by a German movement in force. The first at Tannenberg, six months ago. Next in the sudden advance during October through Russian Poland. Next in von Hindenberg's great stroke to capture Warsaw at the end of November or the beginning of December; and lastly in this struggle in East Prussia, during the last fortnight.

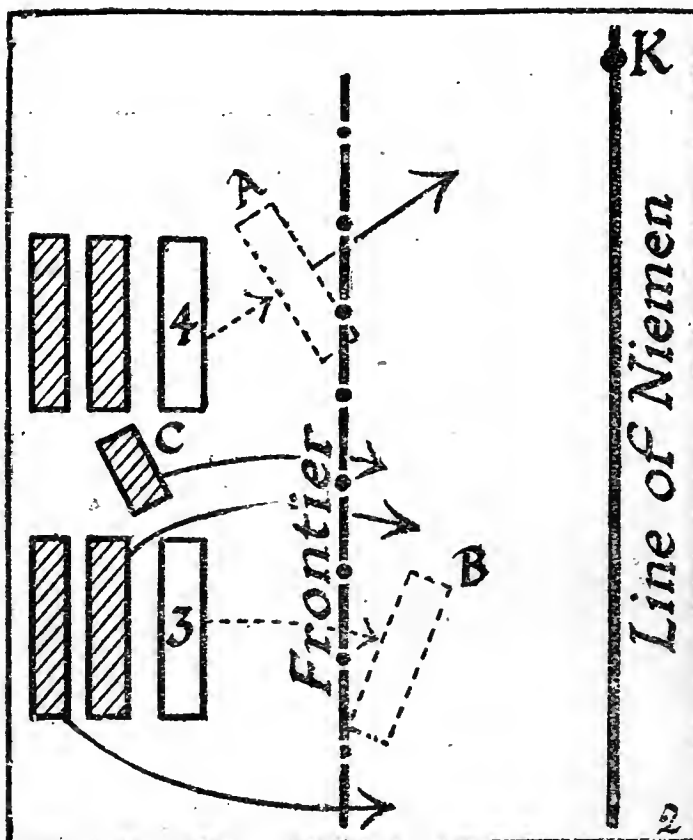
The reason of these sudden attacks has been largely the perfection of the German railway system and the imperfection of the Russian; but there may have contributed to them the difficulty of air work under the weather conditions of the time and place, and perhaps other factors of which we know nothing. At any rate, these sudden attacks have continually taken place, and have been as remarkable for their repetition in the Eastern field as for their absence in the Western.

You have, then, suddenly and unexpectedly attacking the four units upon the line A B anything from eight to ten units, going direct along the direction of the arrows from the west. At the first shock the Russian retirement was immediately ordered, for it was apparent that vastly superior forces had come into contact with the four Russian army corps, which together constituted the 10th Russian army, and which had been forcing their way into East Prussia, with the special object of embarrassing the general plan of the enemy between the Baltic and the Carpathians.

That retirement would have been normal enough but for a successful piece of strategy on the enemy's part, which cost the Russians perhaps 30,000, perhaps 40,000, men, and rather less than half the artillery of one corps. This successful piece of strategy I will next proceed to describe.

The blow aimed at unit No. 4 was directed with special weight against the left-hand of its line at C. The German commanders evidently presupposed—and with justice—that the fourth unit of the Russian command, in peril of being thus cut off from the rest of the army and having behind it the advance on Kovno, would fall back as rapidly as possible upon that town. Permanent fortifications are always—and necessarily—a lure to an army in peril from superior forces pressing it. And this fourth unit had, as a fact, not only fallen back with the utmost rapidity towards Kovno, but also had turned slowly in the press of that retreat from facing east to facing north-east. The unit immediately to the south, No. 3 (which was the 20th Army Corps under Bulgakov) neither retreated with the same rapidity nor in the same direction. The precipitate retirement of No. 4 under the pressure upon its left left No. 3 exposed, and the enemy broke in through the gap thus left between No. 3 and No. 4. No. 3 could not even attempt to extricate itself by a parallel march towards Kovno—the distance was too great—while No. 4 was marching somewhat north of east, 3 was falling back south of east, and suffered the whole weight of the German north central advance. No. 4 got

away, but No. 3 was bent, partially enveloped, and for the most part wiped out as a fighting force. It was not wholly enveloped, as is proved by the fact that it did not lose even a full half of its guns, and that certain elements composing it escaped entire. But of the thirty odd thousand men composing it the greater part never returned to Russia. They were killed, or picked up as wounded, or, some portion of them, captured as unwounded prisoners. The whole movement may be clearly enough seen in some such diagram as the following:



where the shaded lines represent the Germans and the unshaded ones the Russians. 4, threatened with vastly superior forces and returning from C, falls back on to the position of the dotted oblong A, meanwhile making for Kovno at K. Meanwhile 3 tries to fall back towards the position B, but before he gets there is badly crushed upon both flanks by the extending enemy in front of him and by the spreading out of that enemy's lines, which takes immediate advantage of the gap between A and B, and of 3 only a small proportion makes good the retreat to the frontier.

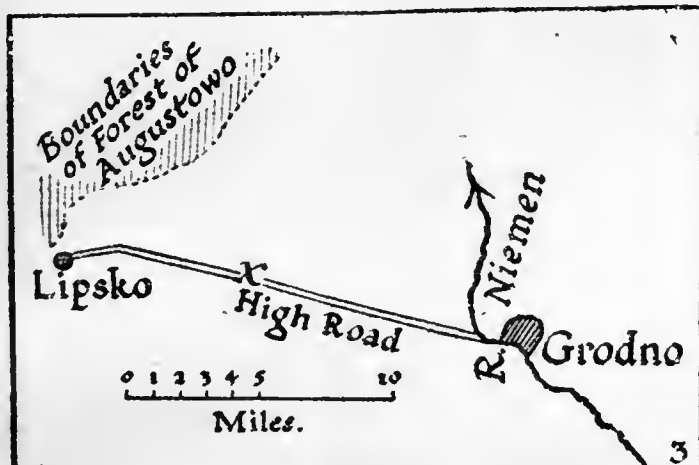
Meanwhile 1 and 2, lower down the line, fought normally enough and suffered no disaster. They retreated in not too great haste, fighting for more than a week with their rearguards to defend the narrows between the lakes in the Masurian region (half shaded upon the map). The last stand of these rearguards was round the town of Lyck, which was carried by the enemy upon the 10th of February. By the 12th all the Russian forces were out of German soil. What I have called the fourth corps was safe back near Kovno, the third had for the most part disappeared in its disaster, the second and the first were standing in front of the line of the Niemen, and lay there in front of Grodno, passing in front of Osowiec to in front of Lomaz. On Sunday, the 14th, the large German forces, having reordered their line, proceeded to two tasks, the advance of the smaller body from Wilkowiski and Marianpol to the Lower Niemen and the advance on the line Grodno-

Osowiec-Lomza. That advance was slow. Heavy as had been the Russian losses, the losses of the enemy attacking the well-defended narrows between the lakes must have been far heavier than that of the Russians in wounded and killed (save in the 20th Corps), and there appears to have been something like a halt for the reorganisation of the advancing force before its next effort was made.

That next effort took the form of a number of local actions upon the Thursday and Friday and Saturday of last week, and it is interesting to note where these local actions took place, because these points are an indication of the approach of the enemy to the Niemen and Narew line.

You have three points in particular. Each of them is about ten miles from the defensive line of the rivers, the fate of which line lends all its meaning to the present turning movement for the investment of Warsaw.

You have, first of all, an engagement taking place on the road between Grodno and Lipsko.



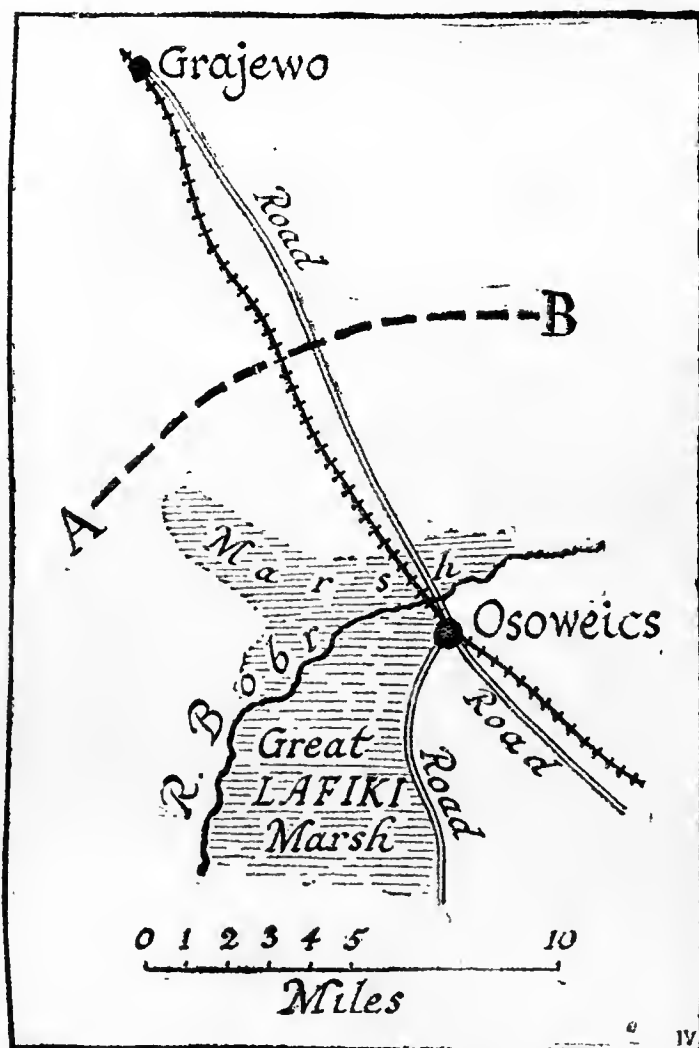
somewhere about the point marked X. There is only one highroad in this district. It was upon either side of this causeway that the action seems to have diverged, and its locality shows that the enemy have passed without check through the forest of Augustowo: an advantage which they owed to the partial destruction of the 20th Russian Army Corps. The enemy is in his next column aiming at the central point of Osowiec.

We are not given the name of the locality where the shock took place in this line, but it must have been at much the same distance from the river as on the Grodno advance, and at about eight miles or so from the Bobr one, which is part of the Niemen-Narew line, as in the following plan. Here, again, only one main road crosses the belt of marsh through which the little river Bobr sluggishly winds, the great marsh known as the Marsh of Lafki. Our indication as to the locality of this shock is afforded by the news that the guns of the forts of Osowiec, the range of whose north-western sector lies somewhere along the line A B, were in action: so your central German advance had reached, by last Saturday morning at latest, to within a day's march of the defensive point of Osowiec, upon which everything here depends.

The third point on which the German advance has developed, as shown on the following page, is further south still and is concerned with the bend of the Narew east of Lomza.

This is a very important point.

It is here that the defensive line approaches most nearly to the railway which it is the object of the enemy to cut. There are no obstacles of marsh



just at this place, when once one is west of the great Wizna marsh.

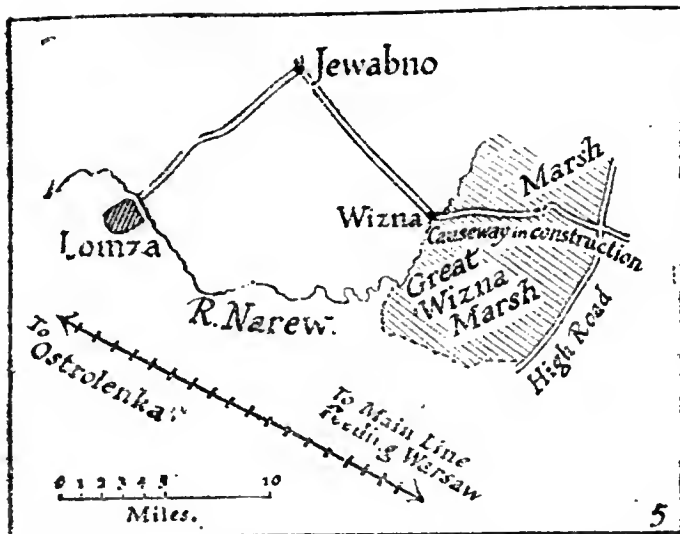
Here, again, the action took place at about a day's march from the defensive line. The village of Jewabno is the starting point for two columns that might be taking the roads for Wizna and Lomza respectively. At any rate, it is the outpost which must be taken before Lomza and the line of the Narew at this point can be carried. Upon Friday, or possibly as late as Saturday morning, a counter offensive undertaken by the Russians carried and kept Jewabno against the Germans.

Matters therefore in general stand thus. The Russian retreat has been effected normally enough with the loss of not 12 per cent. of its guns and of such wounded prisoners as a rapid retirement before an unexpected blow delivered by greatly superior numbers necessarily involves. But to this general statement there is an unfortunate exception in the army corps lost, the 2nd one in the Russian line from south to north, the 20th, of which two divisions disappeared and of which not quite one-half of the artillery appears to have been taken.

The remainder of the 10th Russian army, having lost altogether, say, 35,000 or 40,000 men and 60 or 70 out of, say, 600 guns, is now just in front of the defensive line Niemen-Bobr-Narew, which covers the main railway feeding Warsaw from the N.E., and on Saturday last (we have no later news at the moment of writing, Tuesday evening) it was engaged with various portions of the enemy on points about a day's march in front of this defensive line.

So much being said, let us turn to the object and comparative success or failure of the German movement in this region as a whole.

The effort of the Germans upon the frontier



of East Prussia and against the line of the Niemen and the Narew is then developed and unmistakable. They are on that line as I write. What conclusions does the position lead us to as to the nature of their attack?

The first thing we must attempt to settle is whether our original estimate that the great movement was intended to pierce the defended line of the Niemen and Narew and to reach the main railway lying behind that line was an accurate estimate or no.

The next judgment I propose to reweigh is the conclusion that the new formations were certainly present upon the German side.

The third judgment which we may return to—a much less important matter—is the measure of the German success in this field so far.

As to the first of these points:

It is clear that if the German effort was not directed at the piercing of the Niemen-Narew line and the seizing of the railway beyond it, it had no strategic object.

It does not follow that the German move was either purposeless (which would be impossible) or ill-directed. It may have had no object but that of "countering." Just as a man, finding himself too hard pressed by an enemy, may deliver a sudden blow exhausting to himself for the moment and neither intended nor expected to finish his opponent, but at any rate sufficient to relieve the pressure for a time. If the Germans were acting in this way, then the conclusion to which so many critics of this campaign have come, that Germany feels herself besieged and is acting like one besieged, is doubly proved. For to expend so much energy on what is no more than a sortie, and was not intended to be more than a sortie, with no definite object of final success in front of it, would be a full confession, not only of assiegement, but of nearly hopeless assiegement.

But it is not to be believed that the German General Staff as yet adopts that attitude. That it regards the forces of itself and of its ally as held in the East and West is certain, because that is a plain fact, obvious to every observer. But that it regards the position in the East as so desperate that a mere heavy demonstration leading to nothing is all that is left to do, cannot be accepted. The Germans and Austrians are still in superior numbers upon this front. They certainly have a concerted plan, and it is almost wearisomely obvious that the possession of Warsaw is the key to that plan. It is not to be credited that with the knowledge—common to anyone possessing a railway map—of Warsaw being the capital point of the campaign;

they would make a move like this round the north flank of the Warsaw position without meaning to threaten Warsaw. They may be checked in their front, and when they are checked they may pretend, or desire to believe, that they never attempted the threat at all. But it will require a most cogent and exceptional proof to convince anyone that a movement upon such a scale was undertaken for nothing more than at the least a demonstration and at the best a counter blow.

It may be urged (as certain critics have already urged) that the enemy's object was merely to clear the invader out of German soil. That is surely quite incredible, for the simple reason that it is not war. Short of sundry political inanities upon the defensive being moral and the offensive immoral, human speech cannot be framed to express the ineptitude of an operation which should consider mere political frontiers. An army goes into the field in order to defeat other armies strategically. That is, it goes into the field in order to render the opposing army, through losses of every kind, whether of numbers or cohesion, so much inferior that it can no longer oppose with success. It does not go into the field merely to clear certain geographical areas to which its leaders happen to be attached. If it did *that*, it would simply be asking for defeat in the future and spending its strength in an object that was not military at all.

Let us, then, take for granted that the enemy has the only conceivable strategic object the region affords, and that he is trying to break the Niemen-Narew line; further, that he is trying to do this in order to cut the railway behind that line. How do his chances of success look in the light of the latest news?

We note, in the first place, that the Russian retirement, as a whole, was neither confused nor subject to the will of the enemy. The Russians have not retired in such directions and such directions only as the superior forces before them determined. They have retired upon divergent lines towards chosen bases—Kovno, Osowiec, Lomza. On *one* of these lines they have suffered a local disaster—the line through Augustowo. The others have been accurately followed. They have so retired that each of the fortresses defending the line of the rivers shall be at its maximum strength if or when the enemy reaches that line, and by this method of retirement they have left the enemy the choice either of neglecting the remaining force upon the northern flank between Grodno and Kovno—which may then go south at their time when the issue is joined upon the Narew—or of following the retreat up to the Niemen between Grodno and Kovno and then, separating their forces, by the marshy district of forests between Grodno and Osowiec.

It is important to note this character of the region of the retreat, not only because it shows that the retreat was, though rapid, in the main orderly, but also because it enables us to judge the accuracy of the German reports and the confidence the Russians still place in their fortified line. It also permits us to be perfectly certain that the retirement was effected in the face of very greatly superior German forces.

Next, let it be noted that the Germans are directing their principal effort, not toward the Niemen, but towards the Narew, and that is again what would be expected of a force whose principal object was the railway line screening Warsaw

from the north-east. For the nearer to Warsaw that line is reached, in reason, the greater the effect the cutting of it will have upon the fortunes of the city. That Neo Georgievsk itself can be speedily reduced must be at least so doubtful to the enemy that he must attack the Narew line well above the junction of that river with the Bug. The attack will, of course, if it develops, concern the whole stretch of the river. I am speaking only of the point where he will presumably use his greatest force and attempt to break through. He has against him in this attempt the paucity of the roads, the condition of the soil (another serious thaw having just set in), and the absence of any railway save the two lines, one on Osowiec, the other through Mława, more than 100 miles apart.

The railway from Mława will bring up ammunition for an attack on Neo Georgievsk, but not for the middle Narew, and if Osowiec gives him a better road and a better railway for a single approach, it is yet the hardest point in the whole line for any particular single approach, for it stands in a mass of marsh and forest. In spite of his difficulties, however, it seems clear enough that the enemy intends a heavy attack upon the Narew, and that if he does not deliver it it will only be due to his own miscalculation of the difficulties and the strength of the position gathered against him.

It is true that permanent fortifications have gone down to howitzer fire in this war, but it has only done so where there have been good roads for the big caterpillar wheels to travel on and railways to bring up the heavy ammunition of the monsters.

Now let us turn to the second question—whether, as has been stated in some quarters worthy of respect, the enemy brought up his new formations as I suggested last week.

The additional evidence appearing since then seems to me to make it clearer than ever that he did bring up such new formations.

It is true that the Grand Duke speaks of certain forces being brought up by the enemy from the front immediately before Warsaw upon the Bzura and the Rawka. But these cannot be in any considerable number. The forces upon the two rivers in front of Warsaw have already been heavily tried. It would be impossible to diminish them safely in any considerable degree.

The enemy had in East Prussia up to about the first week in February very small forces indeed—as the scale of this war goes. He held positions the natural strength of which is inferior to none in Europe. He held them against nothing more than the 10th Russian Army, consisting of no more than four army corps; yet he was compelled to give way somewhat. It is not credible he had much more than 80,000 or 100,000 men in the field.

After the first week in February he appears with anything between 300,000 and 400,000 men. Where did the extra new forces come from? Not from the Carpathian front, for that needs every man the enemy can spare and more. Not from the west front, which is very heavily tried, and into which, as a fact, he has had to put new forces quite recently.

Not from any considerable trained reserve, because we know from every indication of the campaign and from every expression of German strategic opinion that he does not work with such a reserve (unlike the French), or rather, to be accurate, he does not work with a large one. It is the

strategy of delay which does that, and not the strategy of sudden action.

The extra men can only have come from the new levies. In what numbers these new levies, and in what formation, have appeared we cannot exactly tell, but we may surely safely estimate those present upon the whole of this front from the Rumanian border to the Baltic at this moment as not less than six and probably not more than ten corps. That is not less than a quarter of a million nor more than about 400,000 men. The point is of considerable importance to our judgment of the whole war at this juncture, because there is nothing upon which we must try to obtain a juster opinion than upon the enemy's margin of men. We know that he has been filling gaps with newly-trained men, very largely, we know that these new formations have appeared upon the East; it seems possible that some of them have also appeared in Alsace. How many have altogether been put in the field up to now from the German Empire alone we cannot yet tell, but if we say, counting all the filling of gaps that has gone on in the last few months, and counting these new great masses in the East, something over three-quarters of a million, but less than a million, we probably shall not be far wrong. It is a point which rather concerns the analysis upon the duration of the war which will follow this; for the moment let us be content to conclude that the new formations have certainly appeared and that so far they have principally appeared in the Eastern field and particularly in this action or series of actions against the Niemen and the Narew.

The third point of our enquiry is the extent of the success so far scored by the enemy against the 10th Russian Army.

Let us first sum up what is exactly known, being admitted directly or indirectly by the defeated as well as affirmed by the victorious side.

Two divisions have suffered so severely as to count no longer in the field. But the guns of less than one division have been lost. The retirement in the case of each Russian body, with the exception of the two divisions that were isolated, has been protected upon every route and in every passage or defile by a rear guard. These rear guards have necessarily suffered heavily; they have also necessarily abandoned many of their wounded to the enemy. On the other hand, there has been but a small proportion of the whole force engaged in such actions. If we put down at about 12 per cent. the general losses of the retirement and add the destruction or little less than the destruction of the two belated divisions, we must revise our earlier estimates and allow for something over 40,000 out of action—killed, wounded, and prisoners, upon the Russian side.

That is a very heavy toll to have paid. It is more than a quarter of the whole 10th Russian Army. On the other hand, we must remember that the whole army was but a small proportion of the total Russian line. Four army corps out of, perhaps, seventy-five.

The loss in material was surprisingly small so far as guns go. In transport it seems to have been heavy, which is what one would expect under the conditions of such a retreat undertaken with all the bad luck of a recent thaw and followed by a heavy fall of snow.

What the corresponding losses of the attacking side may have been we can only guess. The

only losses in guns would be the cases which do occur in a rapidly-pressed advance of guns disabled by the enemy's fire. In transport hardly any loss, but in *men* a very heavy one. You do not force a quantity of defiles between marshes and in such weather against even a greatly inferior enemy (Russians were inferior by perhaps one to three) without losing a great many men in the process. And that is particularly true when one is using raw troops newly levied. They must be used in fairly close formation to be kept together, and their success depends upon mass. We shall not be far wrong if we put down the loss of the whole operations at 10 per cent., or something larger for the attacking bodies and the smaller retreating bodies. It is probable or certain that the German offensive had more than forty odd thousand men hit during those nine days. But, on the other hand, it must be remembered that these losses are not—as in the Russian case—absolute. All the cases of slightly wounded recover, and, among the pursuers, are returned ultimately to the fighting line, whereas most of even the slightly wounded in a force retiring with such precipitation as did the Russian fall into the enemy's hands as prisoners and are lost for good. Of unwounded prisoners, the enemy's losses must have been insignificant. The Russian account puts them at 1,000.

Such would seem to be the summary of comparative losses on both sides; and the statement leads me to a further comment upon the present condition of the German official communiqués.

We have already seen in the earlier comments published some months ago in these columns what was for long the character of the German official communiqué. It was accurate, open, and, as far as detail would allow, terse. We have further seen that when the hope of a speedy and decisive victory was lost the German official communiqué changed somewhat in tone. It began to include, side by side with the old type of information, manifest, though rare and not commonly important, calculated inaccuracies, sometimes deliberate, and in our eyes fantastic, falsehoods. I say "in our eyes" because it was evident that these falsehoods were not intended for our consumption and may have been wise enough for the purpose for which they were designed.

With the communiqué upon these movements in East Prussia, and against the Niemen and the Narew, we seem to have reached a third phase, in which the document for the first time deals in phrases at once vague and capable of grave misinterpretation as well as needlessly boastful. This is no particular accusation of the enemy. Official documents of this sort in war have been far the commonest throughout military history, and particularly on the losing side. But they make a remarkable contrast with what we have hitherto been led to expect from the German General Staff, and they point to some disarray in the domestic opinion which they are designed to affect.

Thus, there is a deliberate confusion between the figures applying to the late separate and successful movement clearing the Russians out of East Prussia and the "winter battle," which obviously is used as a term for the whole mass of the operations since October.

Further, for the former, which is capable of fairly close analysis by students of war, we are given credible figures, less than a dozen batteries and losses of some 40,000, whereas for the whole

business of many months—in which analysis is impossible because all details are lacking—we are given fantastic figures. Again, we are told that "the 10th Army Corps may be regarded as having ceased to exist." That is rhetorical nonsense. The 10th Army has lost, at a guess, 12 per cent., certainly not 20 per cent. of its strength as to three-quarters of its composition. The remaining quarter has indeed been so severely dealt with as to have lost the existence as a separate corps, while of the total artillery of the 10th Army a few heavy pieces, and more than 10 but less than a dozen batteries have also been lost, out of the seventy or eighty which accompany the whole force.

Remark, again, that the series of communiqués, when they are all taken together, do not read consecutively. We are first told that the enemy must have lost such and such a number, we are next told that he has positively lost a lesser number, and there are other discrepancies of the same sort.

All these are not very important points, but they are worth noting, just as the demeanour of a witness in a law court is worth noting. For the German communiqués are one of our very few sources of evidence upon the campaign while it is in progress.

THE CARPATHIAN FRONT.

Upon the Carpathian front there is no news save that, now a week old, of the occupation of Czernowitz. It is a pity. It means that the enemy has thrust his wedge in between a possible Rumanian intervention and the Russian armies in Galicia. It means also the occupation of that railway centre which the capital of Bukovina is, and the importance of which I pointed out last time. It means all that, no more, but unfortunately no less. It does not mean, as certain of the enemy's papers have suggested, that the Russian position in Galicia is threatened. The left flank of the Russian armies in Galicia can be maintained, in spite of the occupation of Bukovina. Moreover, the communications of the enemy's force in Bukovina are very difficult. They go over passes deep in snow, and the railway does not yet serve them. As a strategic move it seems far less than what is happening in the north against the Warsaw railway, but as a political move it has the importance which I have described. It would begin to have strategic importance if *Stanislaus* were occupied, for that would give railway communication across the mountains.

THE WESTERN FIELD.

In the Western field of war there has not been this week, any more than the last, a movement of sufficient importance to justify a careful analysis or to occupy the space of these columns. But such operations as have taken place, in spite of the immobility imposed upon both combatants by the weather, have this two-fold interest: First, that they show the pressure upon the German line to be, if anything, increasing, and, secondly, that in one point there seems to be some indication of a new formation having reached the field. The slight advances made before Lombartzyde—a matter of a few yards—the larger push forward in the Champagne district over a front of two or three miles, the slight success just east of Varennes and south-

east of Verdun, the occupation of one of the spurs in the Vosges overlooking the Plain, are all so many small local advances which, taken individually, mean little. But taken together they mean that over all the line upon which they have occurred the German positions are now being held with a strict minimum of men. This does not mean they will continue to be so held. The moment the enemy feels more secure in Poland he will come back in greater strength upon the West, and, as I have said, there are indications that, in one point of the Alsatian front, some of his new bodies have already come into the field. The evidence for this is no more than a brief sentence in the French communiqué of Monday to the effect that considerable masses of the enemy had recently appeared in front of the valley months, which lie east of Colmar, and that they had come on in peculiarly deep and solid form. They must have come from somewhere, and their presence, coupled with their arrangement, suggests new levies.

But much the most important point on all this front until the large new bodies appear upon either side is the weight of the heavy artillery. We are assured, both in French and English evidence, that the heavy artillery on the French side now dominates its opponent, but only personal elements could determine how far this is the case, and the question of degree here is very important. Should a really decisive superiority appear, it would mean a great deal. It would mean some embarrassment for ammunition on the enemy's side and some breaking strain in its manufacture. It will, perhaps, mean that the blockade in certain metals is beginning to tell, and it will decide more than any other factor except some great superiority in numbers the issue of the next advance on either side. Without his then great superiority in heavy pieces, the enemy could not have done what he did during the advance on Paris. Without it he could not have stood as he did on the Aisne. Lacking it, he will hardly succeed in the advance with new numbers against our positions or resist a corresponding advance from our side.

A POINT UPON THE DARDANELLES.

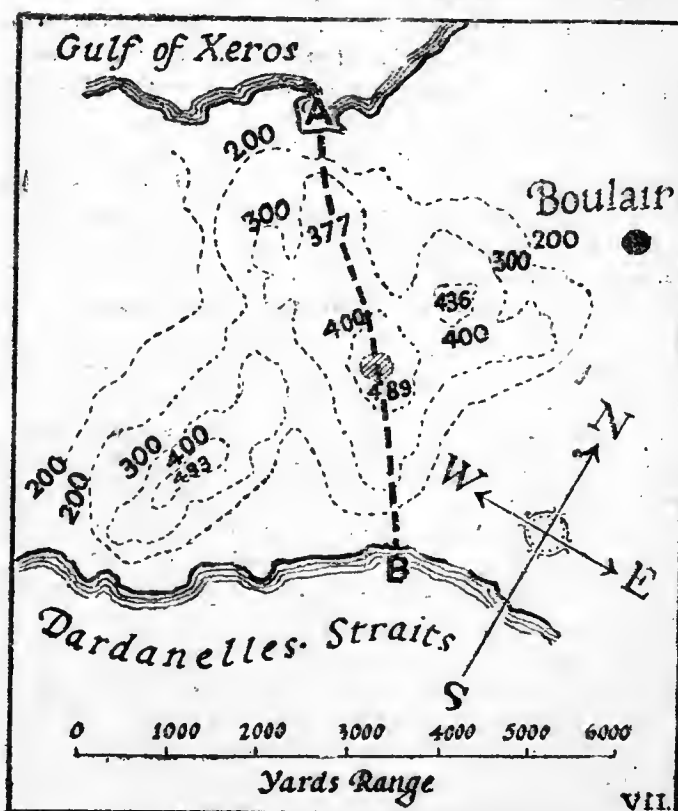
The attack upon the Dardanelles is only indirectly a land operation. It is chiefly a naval operation with a naval object, and conducted in the main by naval forces. There is one point about it which merits attention in connection with the land strategy of the affair. The Gallipoli peninsula, as it is called, which forms the European side of the Dardanelles Straits, and which takes its name from the town of Gallipoli, north of these Straits at G (see plan 6) is divided from the mainland by Narrows, which may be called the Isthmus of Bulair at B B.

Now, it is evident that if this Isthmus is captured and held in sufficient force by a power commanding the sea, the reduction of the isolated forts marked by crosses upon the diagram, lying to the south along the European shore of the Dardanelles, is only a question of time, and with a modern siege train and high explosives, a question of what should be a short time. It is of interest, therefore, to note the conditions of the Isthmus of Bulair. They are here indicated in a rough sketch. (Plan 7).

The Isthmus is, generally speaking, occupied by one big lump of hill, with three summits, 433ft.,



489ft., and 436ft. respectively, the 2,000ft. contour reaching close to the sea upon either side and the highest summit being a little to the south-east of the central point. This highest summit is crowned with a permanent work—of the value of which I know nothing—and there are, of course, entrenched lines reaching across the narrowest part and following the ridge from A to B. But this line can be turned by anyone in command of the sea. A range of 6,000 yards drops sheer from the top to the water on the sea side of the Isthmus, right over the hills into the Dardanelles Straits,



and there is deep water close up to the north-western shore of the Isthmus.

The whole operation of occupying this little belt of land or of sweeping it from the sea to prevent its being crossed by the enemy closely resembles that which the Japanese undertook when they made untenable by their men-of-war the isthmus which unites the Peninsula of Port Arthur to the mainland.

THE DURATION OF THE WAR.

I.

THE first question everyone asks himself about the war is, What will be its probable duration? It is a matter which has not been discussed in these columns because, as will be again insisted upon in a moment, it is not susceptible of calculation or description. But as the matter is now more than ever a subject of public discussion, and as more or less trustworthy reports of this and that authoritative opinion are being circulated, it may be wise to consider the elements of our judgment in this matter.

The reason that interest and conjecture upon the duration of the war have become so much more acute of late is that the end of the winter is in sight and that this moment coincides with the end of the period required for training the enemy's new levies and for equipping our own. The days through which we are passing are therefore a little more suitable for this very indeterminate discussion than were those of the past, and we may without imprudence sum up the only elements upon which any judgment can be based.

First let it be said that any attempt to estimate with precision the probable duration of any campaign whatsoever is a folly. It is a folly into which the enemy very conspicuously fell when he made such careful arrangements for a six months' campaign and failed to foresee the possibility of a campaign lasting for a year—or at any rate made no full preparations for the same.

There is no reason why we should imitate this folly by pretending to any limit of our own, especially after so many months of warfare have taught us how full of unexpected accidents a modern campaign can be.

But though even the vaguest prophecy would be gratuitous folly, it is in this, as in almost all other military affairs, possible to put two alternatives and to say in the one case, "the war will not be of less than such and such a duration," in the other case, "it will not be of less than some other limit."

Before tabulating and considering the elements of such a judgment, one probable and one improbable disturbing factor in the calculation must be eliminated. The probable factor is the entry of one or more of the nations now neutral into the campaign: the improbable factor is separate action, open or concealed, upon the part of any one of the Allies to the detriment of the rest.

If either of these disturbing factors be admitted all forms of calculation upon this matter fall to the ground. We can only judge with the material we have to hand of what will follow if, for instance, Roumania and Italy threw their weight into our scale before next May, or if Bulgaria joined the enemy without a corresponding recoupment upon our side; or what would happen if some one of the Allies, from exhaustion or from any other reason, pursued the common object with less vigour than the rest, it is perfectly impossible to determine.

Eliminating these disturbing factors, then, there remain two great alternatives upon the general character of which we can decide at once.

Either the enemy, who is now in the strict sense of that term besieged, will raise the siege or the siege will continue.

First, note that he can only raise the siege by breaking through upon the West.

A local and sufficient decision in the East might, indeed, enable him to bring great forces back west and might therefore indirectly secure his ultimate object; but that object will only be finally secured if his success in the West is complete—that is, if he break the line containing him and find himself able to defeat in a final manner the French army and its allied British contingent.

In the case of that alternative all discussion of the duration of the war falls to the ground. The menace to our civilisation would be then so apparent and so pressing that every resource left to the Western Allies would be brought into play. And there can be no question, especially upon the part of this country, of admitting the final result.

It is probably true to say that in case of such a disaster a state of war would technically remain even after the very distant period in which the defeated parties should have suffered complete exhaustion, for, to use a phrase justly which has been often used rather wildly in this campaign, such a situation would literally and exactly mean life or death to Great Britain. It would mean the security of her food supply, and without food men die.

It is only in the second alternative that any element for judging the possible duration of the war can be considered. That second alternative is the maintenance of the present siege, and the calculation upon which we are engaged somewhat remotely resembles the sort of calculation which every besieging army general has always made of the power of resistance of the besieged.

Let us see of what the settlements principally consist.

1. There is first the element of wastage, and that has a triple form—the wastage in numbers of men, the wastage of ammunition, and the restriction of supplies due to a more or less perfect blockade.

2. There is secondly the element of new numbers—that is, of recruitments upon either side. Can the besieged army count on more men—if so, how many? Can the besieger count on further numbers—if so, in what amount?

3. The third element is the element of topography. What effect upon my siege will it have to occupy this, that, and the other point of vantage, and what effect will it have if the enemy, on his side manages to push out and occupy this, that, or the other point—after breaking my lines?

We will consider those three main elements of the calculations in detail.

1. First, as to the wastage of men.

There is no need to reiterate in this analysis the calculations which have so often found place in these columns. My readers know upon what figures they are based and that, already some little time ago, one could estimate the total permanent losses of Germany alone, excluding cases of sick-

ness, at a million and a quarter, and the total permanent losses of herself and her ally, counting of course the vast number of Austro-Hungarian prisoners, at about double that amount.

What is more important is a comparison between these vast figures and the corresponding figures of the Allies. We have a basis for calculation, as my readers know, in the British official figures, and in one—the only one—official pronouncement delivered in France now nearly three months ago. On the basis of both these statements we may justly regard the total losses of the Western Allies (excluding sickness) in permanently disabled, killed, and captured of rather more than half a million, but a great deal less than three-quarters of a million men. In other words, the Germanic powers have been wasting, and are wasting, at a rate nearer four than three times the rate of the Western Allies. It is true that they have very much more men than the Western Allies, and it is also true that we have no figures upon which to estimate, even generally, the corresponding Russian losses, though we are pretty safe in calculating that the latter will hardly, counting genuine prisoners of war—that is, soldiers taken as prisoners—touch the million. Perhaps three-quarters would be nearer the mark, but the whole thing is, upon that side, obviously a mere guess.

Well, with the wastage as regards the Western field (where the ultimate decision must lie, though indirectly, as I have said, the Eastern field must determine the Western result), let us next consider the function of ammunition.

Here, again, we have no precise or even general figures to guide us, but we can take a broad survey based upon the simplest and widest considerations. It is not only that Germany has to be supplied. It is Germany and her Ally; and if Germany is highly industrialised, as highly industrialised as England herself, Germany's Ally is not so.

Now we know that in those materials for ammunition which are abundant both with the Allies and with the enemy, the factor is that either working at their fullest pressure can hardly meet the demand. We can roughly, but justly, conclude that with the exhaustion of the original stocks the enemy's position becomes, in comparison with our own, more and more difficult in this particular of ammunition.

What is his position with regard to the necessities of life in the shape of food?

There is nothing more difficult to determine in all our calculations upon the war. On the one hand we know that the whole Prussian system depends upon exact calculations, with all the strength and weakness attaching to this mechanical way of making war, and with its corollary of falsehood never proceeding from emotion, but always from reasoned motive.

Our knowledge of this character in the Prussian system would naturally incline us to believe that all the talk about the pinch for food and the open proclamation of scarcity is a falsehood designed to deceive us as to the enemy's real resources.

On the other hand, we must weigh against this presumption (which found weight in many quarters and has been supported by some of the best critics upon our Press) the fact that you cannot carry through a plan beyond a certain

magnitude for more than a certain time. The bread taxes are realities, so is the war bread, and so are the known imports required by Germany, from year to year; so is the sum spent by the German Government which cannot have passed more than a certain amount for provisions, so is the estimate of the enemy that the war would hardly last more than six months, so is the fact that he made war immediately after harvest.

Put all that together and it seems much more likely that the scarcity is real than that it is merely an elaborate pretence; and to this we must add two facts—first, that the Prussian falsehood, when it is calculated, is usually of a very simple and even a crude nature. To carry through a falsehood of this highly complicated length and gigantic character is something of which we have no experience in the career of Bismarck and his successors.

But the way in which this scarcity in food and in other necessities of life, such as textiles, will affect the duration of the war, depends entirely upon the strictness of the blockade to which we subject the enemy.

There are two factors, both political, which tend to modify the severity of this blockade.

I criticise neither: I merely state them.

The first is a point of foreign policy. It is believed by many excellent judges—or has been believed until quite lately—that a strict blockade would cost us more in complications with neutrals than it would advantage us against the enemy.

The second is a conception, partly humanitarian, partly of baser origin, but finding continual, though restricted, expression in our Press, that to spare the enemy the rigours of a complete blockade is at once our duty and our interest.

We need not here discuss the obvious point, that of all nations in the world the Prussian is least moved by considerations of humanity, and that it would never cross the mind of one of her statesmen or generals to spare this country any rigour in blockade with a power of blockade open to them.

I repeat, these notes are not political and are not to be used for the purposes of criticism. So far as this specific question is concerned—the duration of the war—there is no factor in the calculations more clear than that of the blockade. Whatever the forces may be, tending to end or to continue the war, and however indeterminate our calculations of them may be, the force of a blockade is at once all powerful and incalculable, and the duration of the war is, other things being equal, calculable in an exactly inverse proportion to the rigour of the blockade. The sharper the blockade the shorter the war. The weaker the blockade the longer the war.

It must be remembered in this connection that the blockade from which the Germanies suffer, is not only that imposed by the Allied fleets, of which force, of course, the British fleet is far the superior. France will not allow Germany an ounce of certain materials which she largely controls. Russia, far more important as a source of supply, will not allow Germany or Austria a grain of food for the direct feeding of her people or for their indirect feeding through the keep of her cattle. And Russia can here cut off grain to the value of 50 per cent. per family in the German Empire. She can compel, and has compelled, that Empire to kill vast

quantities of animals the support of which is no longer possible. Not the least important has been the action of Russia in the matter of horses. Normally, Russia sends into Germany 150,000 horses a year. Now she is sending none. Further, Russia sends in vast supplies of eggs and butter and the rest dairy produce in general, which have also been cut off.

And there is one more article of import which Germany needs and which will very gravely affect the future of this war, and that is labour. What numbers can be spared from civilian occupation for the formation of the new armies in Germany is the most poignant and the most doubtful of the matters we touch in this country. But whatever the margin may be, it is heavily affected by the absence of Italian and Slav labour, and the place of these yearly immigrants cannot nearly be taken by the use of prisoners of war.

We may sum up and say that in every element of wastage or of the *strain imposed by time* upon the resources of the enemy, the argument points towards a war of shorter rather than longer duration *if* the containment of the enemy continues unbroken and *if* the blockade which it is now in our power to impose is at last seriously imposed.

As to the precise limits for the duration thus

influenced, it is of course absolutely impossible to make even a rough guess, but the following element in our judgment should be carefully noted. The pinch for food and the pinch for ammunition has already begun upon their side. The accumulation of ammunition beyond what we are actually expending has just begun on the West. Allow, now, three full months and the weight of valuable projectiles upon the two sides will have turned in favour of the Western Allies and against the Germanic powers—if they are still contained, and the same calculation, a little more prolonged, gives the early summer as the corresponding date for the chief effect of the blockade of food. Not the end of May, but the end of June, or beginning of July gives the point of maximum strain in this regard, and that strain will be very heavily increased indeed if the Hungarian plain, or any considerable part of it, should fall into Russian hands before the harvest.

Everything, therefore, seems on this line of argument, to converge upon the early summer as the decisive moment.

But it is only one line of argument. There remain two more, as I have said: the supply of men and the topographical argument. With these I propose to deal next week.

TO END THE WAR.

HOW VICTORY MAY BE OBTAINED AT A COST OF £10,000,000.

By L. BLIN DESBLEDS.

WHATEVER may be the resources of the enemy in men, food, supplies, armament, and ammunition, and whatever may be their bravery, determination, and tenacity, the Allies could end the present war well within six months. This result could, moreover, be achieved at an expenditure, in lives and money, very much less than any amount which the most optimistic military expert, in his most optimistic moments, would venture to fix. It is true that, in order to bring about such a result, it would be necessary to revise our ideas concerning the methods of warfare which our generals and strategists have inherited from their predecessors. If it be accurate to say that the object of a war is to end that war on terms acceptable to the victors, then, if it could be proved that, by a slight readjustment of our ideas in the light of modern conditions, we could bring the present war to an early close, it would be reasonable to assume that, when such proof is established, we shall be expeditious and thorough in giving effect to our modified views.

In the present article the writer proposes to bring forward evidence, based on actual facts and experience, which will prove that an aerial offensive, on a comprehensive and sustained scale, can lead to a quick and glorious conclusion a war which, otherwise, may be both protracted and costly.

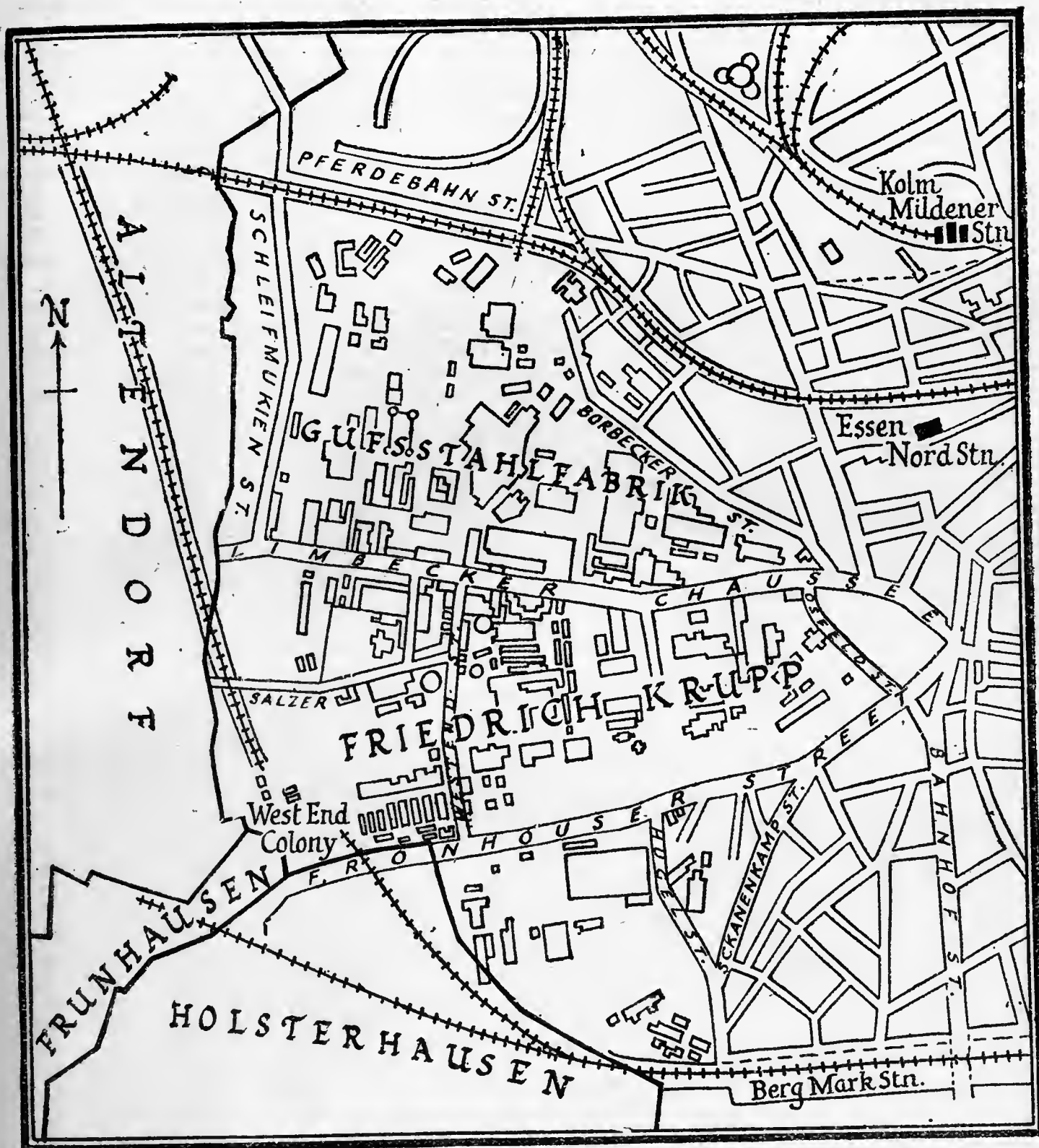
The writer desires to elaborate his views, at some length, on this all-important proposition, and claims earnest attention both on the score of his technical training and experience in aeronautics, and on the fact, also, that, possibly, he has given more thought and consideration to the

capabilities of military aeronautics than, by the very force of circumstances, it has been possible for any member of our Government, or of those of our Allies, to devote to the new weapon of war. It is, therefore, in his technical capacity that the writer brings forward his views in the hope that they may be conducive to the sparing of many lives, great sorrow, and much sacrifice. He would like the reader to realise that it is neither lack of modesty nor self-congratulation, but, rather, an earnestness that his views should receive careful consideration, and a deep sense of moral responsibility that he should do his utmost to save thousands of lives, that have prompted him to write the preceding few words, although they may seem self-laudatory.

THE MEANING OF AERIAL SUPREMACY.

Before an explanation is given of what is meant by the phrase "*a comprehensive and sustained aerial offensive*," it would be well that the reader should have a clear understanding of the real value of aeronautics in the present war.

At the beginning of hostilities there was very little available experience, obtained in actual warfare, to enable our military authorities to have a clear conception of the capabilities of the fifth arm. Perhaps the principal reason that, at first, induced our Government to devote a certain amount of attention to the new weapon was the fact that other Governments were encouraging its development. Then the other Governments, seeing our efforts to create an air fleet, increased their own efforts, with the result that, a year or so previous to the beginning of the present war, the world witnessed a competition among the



SKETCH MAP OF ESSEN SHOWING THE KRUPP WORKS.

leading nations for the "Supremacy of the Air"—a pleasant-sounding phrase, but, at the moment, lacking in exact meaning. Now, after seven months of arduous fighting, and after the new arm has been severely tested, the phrase has acquired a concrete meaning which it is necessary to define.

General Sir John French, in his admirable despatches from the front, has drawn forcible attention to the services which his airmen render daily to the Army. In fact, our Army owes a great part of the ascendancy it has established over the enemy to the precious assistance given by our airmen. It can be said that the services which our aircraft render to our Army can be gauged by the ascendancy which our airmen exercise over those of the enemy. The amount and accuracy of the information which our air service gives to our commanders relatively to that given to the enemy's generals by theirs may, in most cases, be taken

as a direct measure of our ability to preserve our initiative. We are thus led to define the term "Supremacy of the Air" as meaning the capability of airmen to give, in good time, the necessary information which will enable their commanders always to possess the initiative. This definition assumes that the part played by aircraft is connected with, and inseparable from, the successes of the armies to which they are attached. It is a "Supremacy of the Air" having, to a certain degree, negative characteristics. To a defeated army, with its units broken up and fleeing in various directions, or to an army too weak to take advantage of the information supplied by its airmen, such a "Supremacy of the Air" would be almost valueless. It is, however, the kind of aerial supremacy after which the various nations were striving when the war broke out during the declining days of July, 1914. Through lack of any accumulated experi-

ence to guide them, the military authorities of the various countries had not sufficient data to prepare themselves for any other kind of aerial supremacy.

It should not be assumed that such a "Supremacy of the Air," because of some negative characteristics, is not of the greatest value. The truth lies in the opposite direction. We should, therefore, grudge no praise to all those who have helped our country to obtain that supremacy right at the beginning of hostilities. It is a supremacy of such considerable value that we should run no risk of compromising it, and, whatever developments we may wish military aeronautics to assume, it must not be to the detriment of the particular supremacy we have already acquired.

TWO KINDS OF AERIAL SUPREMACY.

The fact remains, however, that we are now, as regards military aeronautics, in possession of data which were not available when the war broke out. Some preconceived ideas concerning the value of aviation have received terrible blows and have met with a quick destruction. Unforeseen uses of the aeroplane have come into prominence. Our airmen have shown a greater valour and adaptability than even the most enthusiastic supporter of the new arm could have expected. It is, therefore, well that we should pause and take stock.

When this is done, we shall find that a most important quality of the aeroplane has been brought to light. This quality is its value for offensive operations. We have already, so far as the number of machines is concerned, utilised it in a timid manner in carrying out a number of raids. Is that timidity due to the fact that we have not really grasped the full value of the aeroplane for offensive purposes? Or is it because we are so engaged in maintaining the supremacy we have already obtained that we cannot vigorously push on the development of a real offensive air-fleet?

The writer has, in these columns, constantly explained the importance of an aerial offensive. Since the publication of his articles the Admiralty have reported two air raids by aerial squadrons of thirty-four and forty aeroplanes strong respectively. Compare the result of these raids with those undertaken with a still smaller number of machines—the Cuxhaven raid on Christmas Day, 1914, for instance—and you will realise clearly the importance of the *number* of aeroplanes composing an attacking aerial fleet. For offensive work, of permanent value, it is not an air fleet of a few dozen machines that is required, but one of about a thousand, or more, strong.

With such an air fleet we could enter upon the conquest of a second kind of "Supremacy of the Air," a kind in which the offensive value of the fifth arm would make itself felt, in a permanent manner, miles beyond the range of our guns. In fact, such an air fleet would be a force that could not be stopped by trenches, rivers, or fortified places; it would be a force in whose way no obstacles could be put, and which would carry the war straight into the heart of the enemy's country.

This second kind of supremacy could be

obtained by the Allies well within six months, and the possession of it would mean an utter impossibility for the enemy to continue the struggle. Such a state of affairs cannot be reached with an offensive fleet of a few dozen, or even a few hundreds strong.

THE BUILDING AND MANNING OF AN AIR FLEET 2,000 STRONG.

In connection with the employment of aeroplanes at the front, it is important to remember that the fifth arm is still somewhat frail in construction. Major W. S. Brancker, Royal Artillery (Royal Flying Corps Reserve) General Staff, in a lecture delivered at the University of London a few weeks before the beginning of hostilities, said: "A good average pilot may fly, day after day, round an aerodrome and make many landings without ever straining his aeroplane, or even breaking a wire; but in war the pilot must fly in any weather to obtain information and land on almost any ground to deliver it. The result will be numerous small breakages and strains, all of which take time and skill to repair, and which demand the provision of a large quantity of spare parts, and their delivery wherever they are required in the theatre of war. The difficulty of supply of spare parts will be increased in proportion to the number of different types of aeroplane employed. The same applies to engines, which, in addition, require thorough periodic overhaul after a comparatively short time at work.

"Again, in war there will be no sheds available for housing machines on the ground. The aeroplane of the moment cannot stand for long in the open without serious deterioration in its flying qualities. . . . All this points to the fact that only a small proportion of the aeroplanes in the field will be fit to take the air at any given moment." These, and other reasons, show that if 1,000 aeroplanes are to be always ready for offensive purposes, we must possess at least twice that number of machines and keep on making good the losses.

Now the question which presents itself is whether it would be possible for this country to build, in the space of a few months, 2,000 aeroplanes, train the men necessary to pilot them, form the necessary contingent of mechanics which would be required to accompany them at the front, and organise an adequate transport service. The writer has gone carefully into these questions and he is convinced that, though the effort would have to be a considerable one, the formation of a powerful offensive aerial fleet, thoroughly equipped and manned, could be produced in this country in the time stated. It can, besides, be asserted that such a fleet could be brought into existence without interfering with or hindering, in the slightest degree, the development of the present air fleet which is so necessary to our armies for reconnaissance and kindred work.

Seven months ago no one could have foretold that the British Army could be made millions strong. We have made the effort and succeeded in producing a new Army by far stronger than any which we have had in the past. In the same manner, if the country decides to consider the creation of an offensive air fleet 2,000 strong, the

writer is in a position to indicate how this could be accomplished, in England, within six months.

THE MEANING OF A "COMPREHENSIVE AND SUSTAINED AERIAL OFFENSIVE."

The reader has, probably, by now some idea of what the writer means by the phrase "*a comprehensive and sustained aerial offensive*." It is a kind of offensive that is not to be confused with a raid. Unlike the latter, a comprehensive and sustained aerial offensive would render the maintenance of a hostile field army impossible, and would bring to an end the system of trench warfare which is long and costly in lives and money. With a powerful offensive air fleet, our airmen could attack, night and day, the roads and railways behind the hostile lines, and could

prevent the enemy from receiving supplies, ammunition, or reinforcement.

The possession of an adequate offensive aerial fleet would enable us to strike, with might and with assured results, at the enemy's arsenals. In the sketch map is shown the western portion of the town of Essen, which is well within the range of our airmen, and where are situated the gigantic Krupp's works. These workshops lie in the west of the town and cover an area somewhat greater than that of the City of London. Imagine what the destruction of such an arsenal would mean to the enemy, and imagine what would be the plight of the German armies if they were suddenly deprived of guns and of ammunition. And such an air fleet, built and equipped on the scale indicated in the preceding lines, and capable of dealing such a decisive blow as the destruction of Essen, would cost less than £10,000,000!

THE WAR BY WATER.

By FRED T. JANE.

NOTE.—This Article has been submitted to the Press Bureau, which does not object to the publication as censored, and takes no responsibility for the correctness of the statements.

THE MEDITERRANEAN.

ON the 19th an Anglo-French force of battleships, battle cruisers, and auxiliaries of various kinds opened fire at 8 a.m. on the Dardanelles forts at Cape Helles and Kum Kale at long range—probably six or seven miles. Early in the war a mild bombardment had proved that the forts could be out-ranged—probably they mount nothing heavier than 8.2's in the way of modern guns, plus a number of bigger guns of obsolete pattern.

Up to 2.45 only big guns were employed for the attack; but then Vice-Admiral Carden, who was in command, ordered ships carrying guns of 6 inch or thereabouts to close in to near range. Two forts on the European side were silenced, and one on the Asiatic side. The bombardment ceased at dusk, when one fort was still firing. None of the warships engaged was hit.

In general, this may be regarded as the most important naval operation to date. Even as an illustration of the ubiquity of Sea Power it has its lessons, for the British ships engaged were drawn from all quarters of the globe (the *Inflexible*, for instance, fought at the Falklands, and the *Triumph* assisted in the bombardment of Kiao Chau). The principal ships engaged, and their broadsides were:—

BRITISH.	FRENCH.
<i>Inflexible</i> 8 12in.	<i>Bouvet</i> .. 2 12in., 1 10.8, 4 5.5
<i>Agamemnon</i> ... 4 12in., 5 9.2	<i>Gaulois</i> . 4 12in., 5 5.5
<i>Cornwallis</i> ... 4 12in., 6 6in.	<i>Suffren</i> . 4 12in., 5 6.4
<i>Vengeance</i> ... 4 12in., 6 6in.	

Forty big guns firing steadily naturally were capable of doing an enormous amount of damage. Whether they did so or no is another matter. Bombarded fortifications have often, after a short interval, a knack of resurrecting themselves in a way which ships cannot. This is due to the fact that unless a gun be actually hit, the effect of shell fire is merely to destroy the gun's crew or possibly bury the gun in débris. To dig away the débris and find fresh gunners is comparatively easy. Hence it has become a canon that a bombardment must be followed up by a landing party to destroy all guns that are still serviceable. There are also canons as to military co-operation.

The passage of the Dardanelles has always been regarded as an extremely difficult operation. The Italians are said to have contemplated and decided against it in their recent war with Turkey, though here, of course, international politics may have had weight in their councils.

The forts, *qua* forts, being Turkish, are probably much less formidable than they are supposed to be, and they are all susceptible to long range bombardments. Danger lies rather in the mine fields laid in the narrows. These will have to be cleared under fire from field artillery and rifle fire (even supposing all forts to be silenced), unless a strong allied army operates along the Gallipoli Peninsula.

Supposing, therefore, that (as assumed) an attempt to

force the Dardanelles, and so reach and capture Constantinople is toward (the assumption may be wrong) it will be—as both Duckworth and Hornby described it in the past—"a difficult and dangerous task."



MAP TO ILLUSTRATE THE DARDANELLES.

On the other hand, the advantages of successful operations would be enormous. Turkey would be eliminated from the war by the fall of Constantinople, but that would be among the least of the benefits.

Corn and oil, which we need from the Black Sea harbours cannot reach us while Turkey rules at Constantinople. Hence the immediate result would be an exchange of useful commodities between the Allies.

DURATION OF THE WAR.

As Mr. Belloc has been announced to discuss this week the Duration of the War from the military standpoint, it will perhaps be of interest to say a few words about the same question from the purely naval standpoint. Here, since, humanly speaking, the situation is all against any Trafalgar, we are necessarily reduced to considering the less dramatic issues which must ultimately bring hostilities to a conclusion.

These are all contained in the phrase, "Silent Pressure of Sea Power," though subject, of course, to how military operations may eventuate.

These military operations are, of course, entirely outside my province; I have no means of estimating the probabilities of a Russian advance or what may happen in the West in the spring. I can simply record the nautical impression, entirely as a *nautical impression*, which from the military point of view may be just as inaccurate as from the naval point of view are military ideas as to the part played by the Navy.

Very roughly and quite crudely the *naval* idea of the land warfare may be put down as something very like "stale-mate," or, at any rate, "perpetual check," which comes to about the same thing. I do not assert that this idea is correct: it is far too liable to be upset by side factors such as resources, food, ammunition, and what not.

But, save in so far as the supply of men is concerned, it seems to me that the whole of the other questions are entirely naval; entirely matters having to do with the "silent pressure of Sea Power," and as entirely unconnected with the gain or loss of "some ground" in the land warfare.

Of course, a sudden preponderance of strength on one side or the other might alter the whole aspect of the land campaign: I am necessarily confined entirely to considering things on the hypothesis of the maintenance of the *status quo* on land and what will happen then.

To date the Navy has hit Germany very hard by the annihilation of her overseas trade, and also a cutting off of food supplies which is probably more apparent than real. Personally I do not believe that we have appreciably affected Germany's food supply or that we shall ever do so, no matter what measures we may take. We can cut off certain luxuries dear to the German stomach, we may render the national tendency to overeat difficult of accomplishment, we may make them uncomfortable and disgruntled, but I am convinced that the entire force of the British Navy will never *starve* a single German. The utmost we can do is to drive them to support life on about the same provender that millions in this country have subsisted on for the last one or two hundred years.

So far from shortening the duration of the war, I am inclined to think that an embargo on German foodstuff from overseas will lengthen the struggle, and serve to keep up to the scratch the "hate" which is Germany's main motive power.

Consequently it may be that possibly our best policy would be to let the Germans get all the food they want, even if necessary spending money in seeing that their food is abundant!

Coupled with this, however, everything in the nature of raw material of any sort or kind would have to be declared contraband—in a phrase, we should *starve the industries, not the individuals*. With both exports and imports cut off, the bulk of the civil population would be out of employment—i.e., without the means to purchase food. The German Government would be compelled to resort to free doles, and the moral effect of such on a population would very soon make itself felt. What happened to ancient Rome would just as assuredly befall Germany, and even a threat to stop food supplies (let alone carrying it out) would probably end the war to a certainty six months from now were a policy of this sort pursued in the interim.

The adoption of piratical methods by German submarines is generally believed here to be due to economic pressure and shortage of food supplies. I greatly doubt whether this has much to do with the matter except in the "talk departments." Rather, I take it, German public opinion wants to see the Navy on which it has spent so much money "do something," and submarine attack on commerce represents the cheapest and most showy way of seeming to "do something."

Altogether (looking at the matter, of course, entirely from the point of view of what our Navy can accomplish), I should say that—failing some perhaps rather improbable drastic change in the situation on land—a naval war based on attempts to curtail German food supply may well go on indefinitely, even if Germany did not possess scores of eminent chemists perfectly capable of inventing chemical substitutes for every known form of food.

If, on the other hand, we more or less glut them with food, but, by the stoppage of oversea trade, import or export, of every sort and kind, create a vast population unable to purchase food, and forced to subsist on Government charity, I am inclined to think that the British Navy can end the war inside six months.

The "dramatic effect" of Waterloo (possibly, for that matter, the previous dramatic effect of Trafalgar) has ever since blinded us to the fact of the enormous power which the Navy wields in the matter of apparently *indirect results*. The public can envisage to the full a regiment fighting in the trenches: what it cannot envisage is that a battleship, floating seemingly

idle, miles and miles and miles away, may be altering for good and all the history of the world.

Let me add that the reason for this is that no one has ever managed to *explain why* in a manner to be "understood of the people." No one ever will. It is a fact beyond explaining. Only a fairly good chess player can properly realise an inkling. The great Napoleon himself could never grasp it, and he fell because he could not. At St. Helena, no doubt, too late, he realised.

All the indications of the present war are that neither the Kaiser nor von Tirpitz can see further through a brick wall than could Napoleon, or they would never have signed their own death warrants by their fatuous declaration of a submarine blockade, and so delivered themselves into our hands for the sake of murdering a few non-combatants. Between this kind of thing and the practice of Chinese pirates, who paint horrid faces on the bows of their junks, the difference is well-nigh negligible where the British Navy is concerned.

To this extent the duration of the war will be shortened. The Germans are out to "frighten the enemy." The British Navy is out to "kill the enemy."

THE SUBMARINE "BLOCKADE."

The policy of leaving the crews of submarine victims to drown without warning has been followed by some German submarines but not by others. Presumably all German officers are not yet "blooded" to the methods of Captain Kidd and his fellow-pirates.

The probable motive of the policy I have discussed elsewhere in this article; here I am endeavouring to find an historical analogy which may have some bearing on the question.

This is somewhat difficult to find. Ancient history teems with instances of captured merchant ships, whose crews were either slaughtered or made into slaves. But even in those long ago days there was a certain logical idea of *plunder*: I cannot recall any historical instance of slaughter of non-combatants for the mere result of slaughter. Primitive man in the Stone Age may have acted on some such lines; but it is doubtful. For slaughter without some idea of tangible gain we must probably go back to the primitive ape.

The suggestion of an ape intelligence as the motive force is not, however, so much due to the wanton slaughter and destruction of all and sundry, as to the inability to perceive the futility.

Once merchant ships take to cruising in groups, it must follow, as I suggested last week, that the main danger will be run by the submarine aggressor—so that even such ape-like joy as may be obtained from wanton destruction will not be forthcoming. Equally ape-like is the inability to realise that drastic retaliatory measures are to be expected, measures which (if sufficient submarine success be secured) may run to the entire German nation (including the Kaiser) being proclaimed outlaws and common murderers.

One's amazement is, however, not at the slaughtering wantonness of the German plan, but at its sheer stupidity.

ANSWERS TO CORRESPONDENCE.

D. D. W. (South Shields).—The Admiralty is always ready to consider any scheme that is reasonable; no "influence" is required.

B. H. H. (London, W.C.).—All data published about recent big guns have been extremely vague. The extreme possible range is therefore entirely conjectural. It is further complicated by the fact that the service muzzle velocity is not the maximum possible: also the mounting does not admit of the maximum of elevation.

T. H. (Winchester).—(1) Would be censored. (2) When German armed liners were to be expected the *Aquitania* was useful; later on her work was to be done equally well by a less costly vessel. (3) The war will probably be over before the ex-Greek *Salamis* is completed. It takes about a year to build and equip a submarine. (4) Allowing the obituary notices to appear was an official oversight. Such notices are now forbidden, I believe.

B. B. (St. Neots).—(1) See reply to "B. H. H." above. (2) Your theory that messages are sent to Germany by means of the "Agony" column is very probably correct. But it could also be done via "Want places," "Situations vacant," and what not. There seems no way by which it could be stopped. (3) There is nothing novel about the submarine mine-layer. (4) Something similar to the scheme you suggest is already employed. The Admiralty leaves nothing to chance in matters of this sort, but they wisely say nothing as to what they are doing.

H. E. C. (Ealing).—Many thanks for the cutting. The Australian Government has certainly done its share and done it well.

L. M. (South Shields).—There are plenty of devices for obtaining accuracy with bomb-dropping, but the trouble is that when bombs are dropped from any height there is always the unknown factor of the wind in between the machine and the target. The wind blows at different velocities at different altitudes, so defections occur which cannot be allowed for from great heights.

J. G. (Edinburgh).—So far as I know the idea you suggest is already in active operation.

V. N. S. P. (London, S.E.).—Very many thanks for your sympathetic letter. I am not at all sure that the person to whom you refer resides in an "Englishman's" home. His handwriting certainly appears to have been acquired in another country.

R. F. W. (Dublin).—A distinguished technical expert wrote last week and gave me a résumé of experiments which he was carrying out with a view to the production of an instrument somewhat along the lines which you have since suggested. It may interest you to know that you have independently hit on a similar idea.

A. R. S. (Newcastle-on-Tyne).—Your view that it is "uncommonly like whining to proclaim to the world that the fellow you are fighting is mad and then complain because he bites your stomach" is, I think, a level-headed one. Of course, to sink ships without warning is piratical; but by making too much scream about it, we run the great risk of playing into Germany's hands.

W. T. H. (Torquay and New York).—Mining the mouth of an enemy's harbour is mainly a waste of mines, because at the best it can merely delay the enemy. The Japanese wasted endless mines off the entrance to Port Arthur. The Russians, of course, maintained a regular service of sweepers to keep a channel quite clear. It is more than probable that the German mines around Heligoland, &c., are what is known as observation mines, i.e., they are exploded at will from the shore, and, therefore, only dangerous to a hostile vessel.

C. M.—Unfortunately, to discuss most of the matters to which you refer is *taboo*. I am quite satisfied in my own mind that the Admiralty is correct in its policy. As for the conflicting rumours, one may be as correct as another. I see and sympathise with the tantalising situation in which you find yourself. I am a fellow sufferer.

H. A. H. (Highgate).—*York* was a penslip for *Roon*.

P. H. H. (Newbury).—(1) I have forwarded the letter about the *Lusitania* to the editor. Your view is, of course, correct. (2) Re your question, the Admiralty has withheld information for strategical reasons which are to our advantage.

"X. Y. Z." (Scarborough).—A scheme like yours was experimented with some years ago. I do not know with what success.

J. H. (Ashbourne).—See answer to "X. Y. Z." above.

J. S. (Dundee).—I have read your communications with great interest. You appear to have covered every possible argument.

R. W. C. (Dunfermline).—It was long ago officially requested that no speculations as to future fleet operations should be made. This was a wise step for the following reason. Those who write necessarily get to know odds and ends of news which have not seen the light, and from these odds and ends it is not difficult to prophesy as to probable happenings, and so very possibly unintentionally to aid the enemy to bridge the gap which exists between the British mind and the German one.

L. M. T. (Wimbledon).—Sorry, but I am not allowed to discuss the matter.

H. O. M. B. (Landinam).—(1) Many thanks for your long and interesting letter. It is the curse of the country that the ordinary population living in districts remote from danger is totally incapable of realising that we are at war. A small German raid in one of these places would probably be a blessing in disguise. (2) I have discussed the underwater supply of submarine stores in last week's issue, which coincided with your letter. (3) Both Philip of Spain, in Elizabethan days, and Napoleon, at a later era, had designs of invasion conducted with flat-bottomed boats; schemes which never came off. The Germans are reported to harbour similar plans, but, though they might be immune from torpedo attack, they would certainly not escape shell fire. I fancy that their plight would be reminiscent of the Turks on the Suez Canal. I hope you will soon recover and be able to go back.

M. W. (Bournemouth, ex Belgium).—If you have anything of value to give to the British Admiralty, you should offer it to them direct. But if you want to make it a matter

of trading information for cash, I have no sympathy with you whatever. I do not wish to be rude, but we all of us are up against a common enemy, and no "inducements" should be considered. Perhaps, however, you have not used "inducement" in the English sense, in which case I apologise for the above remarks and refer you back to the first sentence of this.

W. B. F. (St. Newlyn East).—Our remote descendants may see something along the lines which you suggest, but to-day it would be entirely impracticable.

GoGo (Birkenhead).—(1) A zig-zag course is the best thing because a submarine, when submerged, is slow moving, unable to see very well, and compelled to be bows on in order to fire its torpedoes. (2) It is, of course, illegal in any case whatever to sink merchant ships without warning, and, indeed, to sink them at all is only legally permissible when there is no reasonable possibility of bringing them into port with prize crews. However, Germany has cast aside all ideas of international law, and reverted to the ethics of two thousand years ago.

D. S. H. (London, N.W.).—Your idea for locating mines is certainly ingenious, but the whole area could be swept more quickly than your "detectors" could be laid down.

T. C. (Hayward's Heath).—So far only one of the Chilean Dreadnoughts has been taken over, the *Almirante Latorre*, now the *Canada*. The other Chilean ship, the *Almirante Cochrane*, is far less advanced, so the question of taking her over cannot yet arise. The policy of the British Admiralty is to inconvenience as little as may be neutrals who have ships building in this country.

M. J. C. (Glasgow).—(1) Roughly speaking, errors of "direction" in modern gunnery do not exist. No matter what the range, "direction" is mainly a matter of "hitting the haystack." "Elevation," on the other hand, is governed by many factors, of which a few are correct estimation not only of the range but of where the target will be when the shell fetches up, variations in powder, the motion of the ship firing, and a few other contraptions as well. (2) The article to which you refer deals with American naval gunnery, which differs from ours in various ways. The Americans think their way the best. We think ours is. The Germans have probably a third way still! Anyway, you will realise that any explanation as to how and why a British shell hits a German ship in a tender place is quite inappropriate at the present time. Be content to thank God for the hits, and don't bother how it's done so long as it is done.

P. G. C. (Potter's Bar).—It is impossible to answer your first question. As regards the second, so far as I know U16 managed to get out of Eshjerg within the 24-hour limit. According to my information there was nothing particularly wrong with her, but the weather was bad and she took advantage of International Law to gain much needed rest. There is no nation so attached to International Law as Germany—when advantage is to be obtained from it.

A. Z. (London, N.).—I am afraid that beyond informing you that the *Queen Elizabeth* is already known in the Navy as "Black Bess" I cannot give you any information such as you desire. But you can "sleep in your bed" to the extent of taking it that Lord Fisher will probably know better what to do with her than "the majority of the members of your club who discussed the matter." It is quite true that I uphold the Admiralty as against civilian opinion which is "profoundly dissatisfied"; but what would you have? When you order a suit of clothes, do you do the cutting and fitting, or do you leave it to your tailor?

"Patriot" (London, W.).—Your 27 reasons why Admiral Jellicoe should have his battle fleet off Heligoland form interesting (though terribly lengthy) reading. I should, however, be more impressed with your "patriotism" and your conviction of our Admiralty's "incompetence or treachery" if your letter "s's" were after the English instead of the German style. The only thing in your letter which I can congratulate you on is "I prefer to anonymous be." Here you are undoubtedly wise!

L. K. (London, S.W.).—The flagship of the Italian Admiral Persano at Lissa was the *Affondatore*, the "Dreadnought" of her era. He shifted his flag to her from the *Re d'Italia* shortly before the battle, and kept her out of the line. Had he gone into action, leading the Italians in the *Affondatore*, he would probably have won—the Austrian fleet was distinctly inferior in ships.

J. F. G. (London, S.W.).—Your scheme is ingenious, but I am afraid that it would be out of court on account of weight, and also on account of the complication of fitting. The ordinary Bullivant torpedo net is far simpler and of far less weight.

CORRESPONDENCE.

LARGE ORDNANCE FOR SIEGE OPERATIONS.

To the Editor of LAND AND WATER.

SIR,—In LAND AND WATER of February 20, Colonel Maude made some interesting remarks on the operations at the siege of Sebastopol. A good deal of useful information might be obtained from careful study of this siege, but of late years it has been quite ignored. The tactics employed by the great engineer, Todleben, which delayed the siege for so long, and the skilful co-operation of the French and British batteries in assisting attacks on outworks and at the final assault on the Malakoff, are worthy of careful study. One great lesson taught by the siege was the great power exercised by artillery and the necessity for its development. At Sebastopol, as Colonel Maude points out, very much more powerful ordnance were employed than those used in former sieges, but the greatest effect was produced by the fire of large mortars—13-inch. The result of the fire may be judged from the fact that for some two months before the fall of the place, the Russian casualties were one thousand each day. Colonel Maude mentions Mallet's mortar of 36-inches calibre, which was a trial in the right direction. But there were difficulties in the manufacture of very large ordnance at that time, and the authorities failed to grasp the importance of the idea. It is a curious fact that Antwerp, when besieged by the French in 1832, surrendered chiefly from the moral effect produced by a few shells fired from a monster mortar with a calibre of 24 inches, which the Belgians considered "the finishing stroke to the enemy's barbarous manner of acting."—Yours, &c.,

CHARLES OWEN, Major-General.

THE 9TH LANCERS.

To the Editor of LAND AND WATER.

SIR,—Can any of your military readers settle this question? I see a much-advertised print which depicts the 9th Lancers charging German guns. The letterpress describing this print tells how the Lancers captured the guns at Mons and that the original picture is by Mr. J. Halford Ross.

The 9th Lancers have shown exceptional gallantry, and none are braver or have suffered more severely than they have. But I am told that they on no occasion charged guns at close quarters, as shown by Mr. Halford Ross, and that their famous attack was against a great number of infantry, whom they did not come near to on account of barbed wire defences.—Yours,

OLD SOLDIER.

GERMANY'S RESERVES.

To the Editor of LAND AND WATER.

SIR,—A correspondent of the *Times*, under the heading of "Six Weeks in Germany," states that there are 750,000 picked men in reserve of the 1915 category. I fail to see how this can be possible, for in 1897 the German population was only 54,000,000, and the number of male births did not exceed 945,000 at the then birthrate of thirty-five per 1,000. The deaths in the first year of life in Germany at that date were 198 per 1,000 in Prussia, and as high as 282 per 1,000 in one State. At the lowest estimation 189,000 would have died in the first year of life. If to this number is added the deaths between the first and eighteenth years, and consider the number of profit, it does not seem possible that the estimate as given above can be correct.—I am, Sir, yours obediently,

MEDICUS.

THE EFFICIENCY OF AIR ATTACKS AND THE RHINE RAILWAY BRIDGES.

To the Editor of LAND AND WATER.

SIR,—Up to the present no system of concerted air attacks has been attempted against the vital node points in the western line of German communications—namely, the railway bridges over the Rhine.

Of the railway bridges from Cologne to the Swiss frontier, only those from Cologne to Mayence are over 120 miles from Verdun, and the remainder are within striking distance from Nancy, if we take 120 miles—the distance from Belfort to Friedrichshaven—as a feasible radius for operations. The aeroplanes might be used in squadrons of five to make simul-

taneous attacks on the bottle-necks formed by the bridges. I have only a copy of the 1896 *Times* Atlas by me, which would make it appear that there were then only twelve railway bridges in the area in question. This would need a fleet of sixty aeroplanes, only some twenty more than the number used last week on the Belgian coast.

The targets offered by the bridges are long, and the difficulty caused by the fact that they are narrow would be counteracted by the adoption of Mr. L. Blin Desbled's plan of dropping bombs in other vertical planes to the right and left by each squadron.

Great delay and confusion among the German transport would result even if half the bridges were severely damaged on the same day. In Colonel Maude's words, "Raiding the node points of the enemy's communications will gradually make the supply of men in the trenches almost a matter of impossibility."

The concerted operation ought to be repeated before the repairs to the bridges have been completed. To make the plan a success the two factors of co-ordination and repetition of attack are essential.—I remain, Sir, your obedient servant,

H. J. THOMAS.

New House, Wadhurst.

PERTHES-LES-HURLUS.

To the Editor of LAND AND WATER.

SIR,—The village of this name has been prominently mentioned in many of the French official messages concerning the war. An inquiry addressed by the present writer to the columns of your contemporary, *Notes and Queries*, as to the meaning of the latter part of this name has brought a valued reply from an esteemed correspondent to the effect that the name signifies Perthes near Hurlus. *Les* should be spelt *lez* or *lès*, an obsolete word meaning "near," "by the side of," from the Latin *latus*. It is now only used in connection with place-names—e.g., Plessis-lez-Tours. Hurlus is a larger village, about a mile south-east from Perthes.—Your obedient servant,

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Glendora, Hindhead, Surrey.

SUBMARINES AND MERCHANT VESSELS.

To the Editor of LAND AND WATER.

DEAR SIR,—The instructions to the latter when attacked by the former are to give the submarine their stern and steam away as fast as possible. Would it not be an additional security to the merchant vessels if, while thus acting, they were to throw overboard a quantity of old fishing nets, which would entangle a torpedo sent in pursuit of them?—Yours faithfully,

H. J. P. THOMAS.

Elcot Park, Kintbury, Berks.

THE WEST YORKSHIRE REGIMENT.

To the Editor of LAND AND WATER.

DEAR SIR,—Will you allow me to appeal through the medium of your paper for warm gloves and mittens for the men of the 12th Service Battalion, West Yorkshire Regiment, now training at Leighton Buzzard? Much of these men's time is spent on the rifle range, and they suffer very much from cold hands and chilblains, neither of which are conducive to good marksmanship.

People send quantities of warm clothing to our men at the front, but are a little apt to forget the men of the new armies at home.—I am, Sir, yours faithfully,

BABETTE JAKES (Mrs.).

Ashleigh, Grove Road, Leighton Buzzard.

Mr. Hilaire Belloc will lecture at the Borough Hall, Stafford, Wednesday, 3rd March, and at the Temperance Hall, Derby, on Thursday, 4th March.

His next lecture at Queen's Hall, London, will be on the evening of Tuesday, 9th March.

Mr. Jane will lecture on the Naval War at Queen's Hall, London, on Friday evening next, the 26th inst.

Professor Lewes will lecture at Queen's Hall on "Modern Explosives" on Tuesday, 2nd March.

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THROUGH THE EYES OF A WOMAN

The One and Only Subject

A MAN home from the front on a few days' leave recently had one bitter cause for complaint. He admitted that the mud in Flanders was muddier than any mud that had ever been known or imagined. He granted that the trenches at times were not the most comfortable form of habitation, but there was one thing only that really roused him to wrath.

"What I can't stand," said he, "is this incessant war talk. You people talk of nothing but war from the time you get up in the morning to the moment you go to bed at night. What Kitchener has said, what Fisher is doing, why the Grand Duke retreated, why this or that news has been suppressed; Zeppelins, Taubes, the new English gun, Joffre's spring plan of campaign, so on, and so forth, every minute of the day. It's sickening!" Here he paused for breath, as may reasonably be supposed, but shortly afterwards informed us that the only people who did not talk incessantly of the war were the soldiers themselves, and that other folk had better follow their example.

This may be and no doubt is quite true, but the question nevertheless remains: What else is there to talk about? Precious little in very truth. The point is: Had we at times better be dumb than talk about the war and nothing but the war? Personally, I am inclined to think we had. Any kind of obsession is dangerous, but the war obsession is more so than most, as all will agree who give the matter half a moment's thought. The way in which even the mildest and meekest amongst us welcome with fierce joy the news of carnage amongst the enemy or a report that all the Kaiser's sons have been killed is a case in point. It is very natural, no doubt, but in quieter moments many of us will wonder at the depths of ferocity which we have displayed. Feelings we never dreamt of possessing have been betrayed, and with blood and thunder for ordinary tea-table talk it is really no cause for wonder they have risen to the surface.

The Practical Side of Things

Since August even the least practical amongst us have attempted to become practical members of a practical nation. We have honestly tried to eschew vanities, and each woman in her way, be it small or vastly important, has endeavoured to be of some positive use. Complete households, from the mistress to the scullery maid, have turned to with a will, and worked with fingers as well as with brains. There has been very little idling; it has, in fact, been almost a competition amongst women as to who could be the busiest, and many have mapped out every moment of their day, grudging almost a minute of wasted time. And all has been governed by this one object of usefulness. The dilettante has been sternly banished from the scene, and no half-way measures welcomed.

No clearer proof of the practical phase through which women are passing can be given than that furnished by the new skirt. This new skirt has been intimated for some time, but it is only now, when women are forced by the rapidly approaching spring to pay some heed to their wardrobes, that its claims are being seriously considered. A delightful book has just reached me from New York, which has something to say, albeit very little, upon the matter of clothes. It is written by Mrs. Beatrice Forbes-Robertson Hale, the well-known feminist—though she is rather better known in America than over here—and is called "What Women Want."

Mrs. Hale, writing in June of last year, when tight skirts were still habitual, goes so far as to say: "I doubt if one can touch pitch without being defiled more readily than one can habitually wear a hobble skirt without being belittled." If she had been writing at the present time on present-day fashion she could have no such text for her theme. For the latest skirt is exceptionally full, and wide. It measures, indeed, no less than five yards round the hem, and it is exceedingly short, into the bargain. Such a practical skirt as this has not been seen for years, save for country use. Now we are invited to wear it at all times and seasons. Every skirt is short and full, whether it be for day, afternoon, or evening use. It will be delightful to move unshackled once again, and, to quote Mrs. Hale once more, by this gain in freedom our "accountments gain in sanity."

(Continued on page 316)

PERMANENT COAL.

A Clever Invention. An Inexpensive Appliance. Suitable for all Coal-Grates, which Saves Scuttles upon Scuttles of Coal.

An exceedingly clever invention by a North-country scientist bids fair to revolutionise all existing ideas of coal consumption. It is suitable for grates of all kinds and sizes (including kitchen ranges), and only costs 3/-, or 3/6 post free.

No Alteration in Appearance of Fire. No Treatment of Fuel. No Special Installation, or Renewal.

The Incandescent Fire Mantle is a device of special design and composition, fully protected by Patent, which is simply placed in the centre of any grate. It scientifically utilises the heat energy created by the combustion of the coal, which, instead of flying up the chimney, as is the case of the larger portion of such energy in ordinary grates, is made to bring the mantle to incandescent heat. Thus there lies in the centre of the fire a white hot mass which may be termed everlasting coal, throwing off more heat than coal alone can give, yet absolutely unburnable, and as good at the end of twelve months as it is the first day. The appearance of the fire is in no way altered; the mantle is completely covered by the surrounding coal, and its presence cannot be detected. **NO INSTALLATION, ALTERATION, OR SPECIAL TREATMENT OF THE FUEL OR THE GRATE IS NECESSARY.** There is no recurring expenditure of any kind; when once you have purchased the fire mantle at its modest price of 3s. you can enjoy for ever a beautifully bright and hot fire at an enormous saving of coal. The mantle is placed into the grate with exactly as much—and no more—trouble than it is to put on a lump of coal. It requires no attention or care of any kind.

Remarkable Test Figures.

As the result of a recent strictly supervised test upon modern grates, it was found that the average consumption of coal per grate in the ordinary grate (eight grates were experimented upon in this particular test) was 34 lb. of coal for a period of 11 hours. On the following day one of the new fire mantles was placed in each of these same grates, and the coal consumption per grate for a period of 12½ hours was then found to have been reduced to 19 lb. 3 oz., whilst the heat was greater.

Saves its Cost in a Few Days.

The price of the Incandescent Fire Mantle is 3s. (3s. 6d. post free), which small sum is saved back in a few days. The mantle lasts for an indefinite time and can be used in grates of any size, pattern, or construction. On account of the proportionate saving in postage, two mantles can be dispatched post free to any address in the kingdom on receipt of 6s. 6d., and three for only 9s. At this time of enforced economy, and with the additional danger of the present high coal prices rising still further, the great saving effected by the Incandescent Fire Mantle should not be neglected. Orders and remittances to be addressed to The Incandescent Fire Mantle Syndicate, (Dept. 28), 9 Station Parade, Queen's Road, London, S.E.



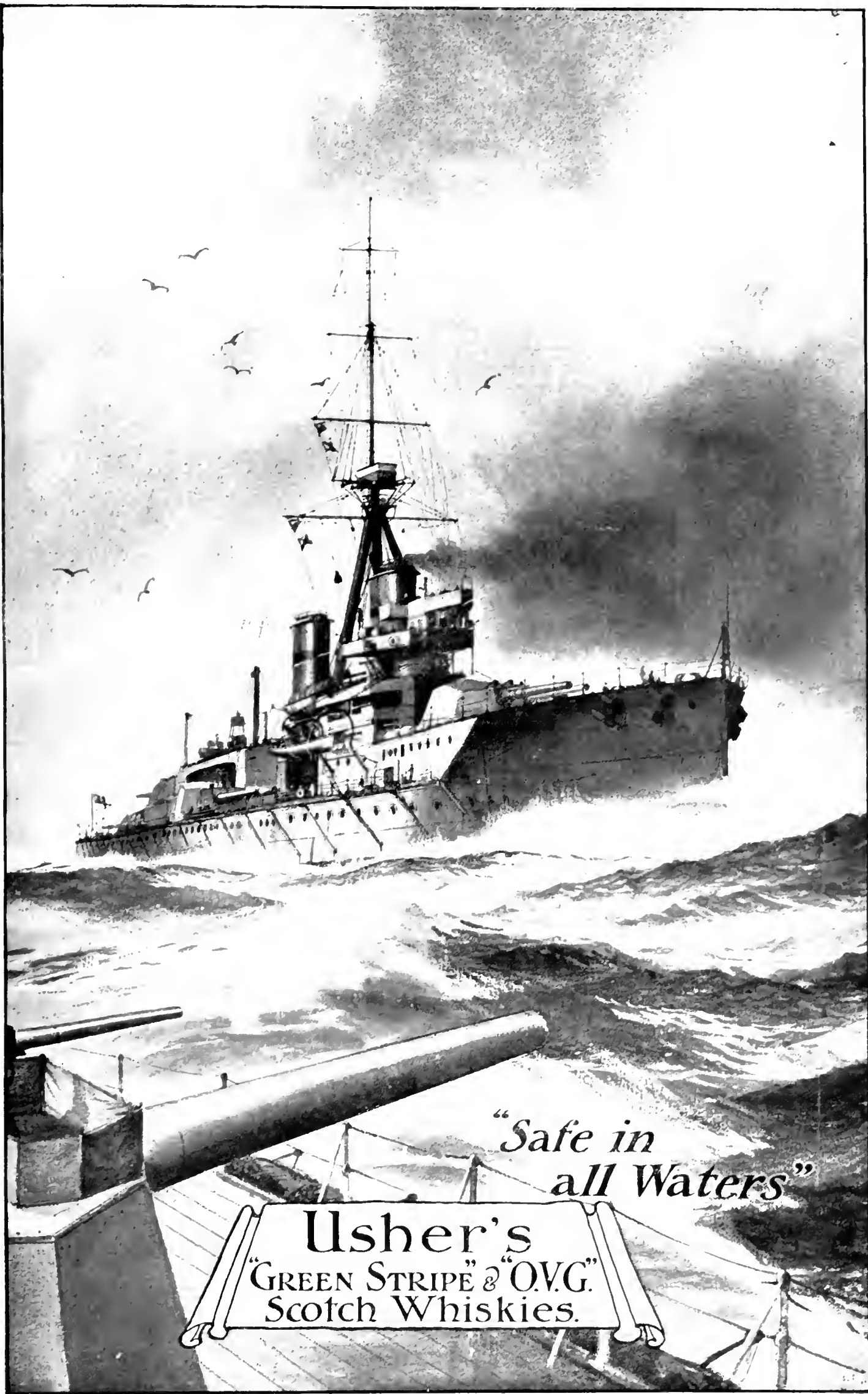
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THROUGH THE EYES OF A WOMAN

(Continued from page 314)

Good Work in Belgium

When a history of the war comes to be written it is quite likely that space may be found for mention of Dr. Hector Munro and his gallant band of helpers. For a long time past this Ambulance Corps has been doing splendid work in Belgium. They have established centres at Antwerp and Ghent, and after being forced to leave these places have now made their headquarters at Furnes. The work is endless, and the strain upon all concerned a heavy one, but the Corps is hourly reaping its reward. There is hardly a soldier amongst the Allies who has not heard of its fame, and many of them have already cause to bless the day when Dr. Munro and his staff took a hand in the hospital work abroad. Numbers of wounded soldiers have been rescued from the firing line by one or another of the Corps' motor ambulances, manned by plucky helpers, and the rescue work has often been carried out under circumstances of great danger and difficulty.

Amongst the members of the Corps is Lady Dorothea Feilding, one of Lord Denbigh's daughters. She is a pretty girl with an infinity of pluck and courage, and apparently tireless. Eyewitnesses report that time after time she has gone out under fire to bring in the wounded, and that she does not know the meaning of fear. It is a splendid reputation to have won. The last time I saw Lady Dorothea was at Ascot. She was watching the King and Queen drive away just before the last race, the first day of the meeting. She was very well dressed and very attractive to see, yet I do not doubt she has never been better suited than by the workman-like kit she is wearing at present while on her work of mercy and sorely needed help.

The Discipline of War

The chance of the silver lining goes far towards making the blackest of clouds tolerable. It appeals to the optimism that is latent in every man, no matter how strenuously he may deny it. It would be hard for us all if we could snatch no gleam of comfort from the dread event which has overwhelmed humanity. Life would be well-nigh intolerable, all sacrifice vain, and the future a thing of no account. As a matter of happy fact, we can look with confidence upon the reverse side of the shield. We look forward to a future full of hope and promise, one in which values will have been readjusted and seen aright. It is the old story of the cleansing fire, and it is fortunate that it is so. Otherwise all things would resolve themselves into one gigantic puzzle, the answer to which was for ever missing.

It is this hope of the ultimate issues that is helping many a woman to face her life just now. In spite of all the activities into which we have plunged, in spite of our committees, organisations, institutions, and schemes of a hundred and one descriptions, there is a terrible amount of time left for thinking. Women have the infinitely harder part of watching and waiting; about that there is no shadow of doubt. The only thing to be done is to take a long and wide enough view—not to limit events to February of 1915, but to imagine what Februaries of succeeding years will be, when peace is restored; and for the first time in most of our lives we realise what peace really means. In common with many things, it is in its absence we have grown to appreciate it, and the lesson could not have been learnt in any other way.

ERICA.

SCOTTISH MOTOR AMBULANCES

At Buckingham Palace on Wednesday H.M. the King inspected a number of motor ambulances which are being sent to the front by the Scottish Branch of the British Red Cross Society. Parked in the Mall, the long string of cars looked very handsome and imposing, stretching as they did from the Victoria Memorial to nearly half-way down the avenue. At the close of the inspection the King, addressing Sir George Beatson, chairman of the Scottish branch, and other members who were present, said:—

"I cannot refrain from expressing my appreciation of this splendid gift which has come from Scotland. I assure you, gentlemen, I appreciate it very highly, and am quite sure it will be of the greatest service to our troops in France. I am glad to have this opportunity of expressing my warm thanks to you, and I can assure you that this inspection has afforded me the greatest interest and pleasure."

The Scottish Branch of this Society has made the work a national one, all classes having subscribed. We think that a little more than the mere mention of the fact is due to the man to whom the Society owes the success of the movement and the raising of over £140,000—no mean total. We refer to Mr. James Inglis Ker, J.P., whose unceasing efforts have made the scheme possible.

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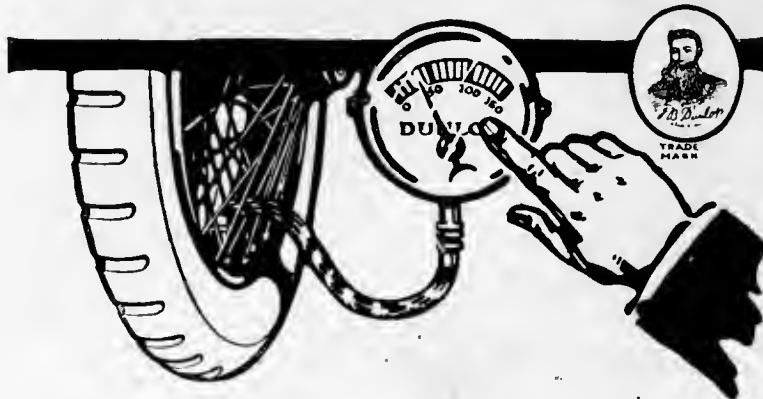
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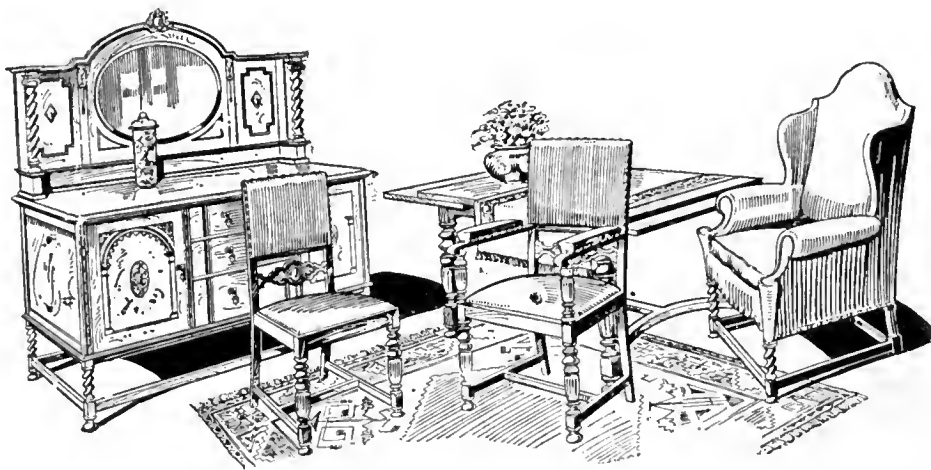
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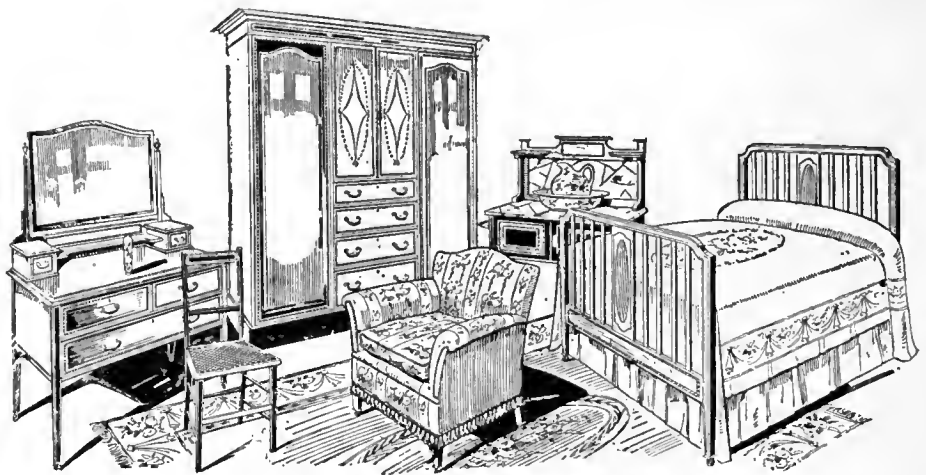
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EXPLOSIVES

The History and Development

By "A.M.I.C.E."

MODERN fighting, both on land and sea, depends primarily on explosives, either for blowing up trenches, buildings, railways, etc., or for propelling projectiles and bullets. A modern war without explosives would be inconceivable. An explosion may be defined as a very rapid combustion evolving gases which are considerably expanded by the heat produced by the combustion.

Explosives may be classified into three groups: (1) Propelling explosives, (2) Disruptive explosives, and (3) Detonators or exploders. A propellant is an explosive having a rate of combustion regulated to a certain extent between time limits, while in a detonator or disruptive explosive the disturbance lasts only a very short time. An explosion can take place in two ways, either by burning or detonation.

In the first case the flame from the exploding charge is quickly communicated to all the exposed surfaces of the powder, while in the second case the initial force of the explosion is sufficient to break down the structure of the powder, so that the flame reaches every particle of the mass; thus causing an instantaneous ignition, which is called detonation. Detonators are useless as propellants, since the force is generated so quickly that it destroys substances in contact with it instead of projecting them to a distance.

The first group includes all classes of gunpowder and smokeless powders used in fire-arms; to the second group belongs all explosives used in shells, torpedoes, mines, demolitions, etc., and to the third group belongs those used for originating explosive reactions in the explosives of the first two groups. Gunpowder consists of three substances, namely, saltpetre, charcoal, and sulphur, and differs from other explosives by being a mechanical mixture, and not a chemical compound.

English black gunpowder for military use is composed of seventy-five parts of saltpetre, fifteen parts of charcoal, and ten parts of sulphur. The ingredients are intimately mixed together and are inert towards one another until the application of heat causes them to combine chemically. Charcoal and sulphur are both combustible bodies requiring only a sufficient amount of oxygen to combine with in order to be converted into gaseous products. Saltpetre (or potassium nitrate) is very rich in oxygen, which is released by the application of heat, and combines with the sulphur and charcoal, which burn rapidly. For warlike purposes gunpowder has become a negligible quantity, although it is still employed to a certain extent for blasting and demolition purposes. It is not used to any extent for propelling bullets or projectiles, as there are better compositions available, but it is still used to a certain extent in ordinary sporting rifles.

France was the first country to adopt a smokeless powder—in 1885, for use with the Lebel magazine rifle. It was invented by Vieille, and was known as Vieille powder or "Powder B"—so named after General Boulanger. Since that date many preparations giving little or no smoke were proposed as a substitution for gunpowder, the principal ingredient being gun-cotton. In 1888 Mr. Alfred Nobel, the inventor of dynamite, took out a patent for the combination of nitro-glycerine with gun-cotton for the production of a smokeless explosive. Modern smokeless powders can be divided into those that are made of nitro-cellulose (the chemical name for gun-cotton) and those that are made of nitro-cellulose and nitro-glycerine.

Gun-cotton, which is to-day the principal ingredient of modern Service powders, was discovered in 1846 by Schönbein, and was proposed as a substitute for gunpowder. Pure gun-cotton belongs, however, to the explosives of group 2, and by itself is totally unsuitable for use as a propellant. It is largely used for demolitions, submarine mines, and torpedoes. It is prepared by immersing cotton wool in strong nitric acid and then carefully washing it. The cotton, which contains principally carbon, corresponds to the charcoal in gunpowder, and the nitric acid, which is very rich in oxygen, to the saltpetre.

Modern gun-cotton or nitro-cellulose is prepared by using the waste of cotton mills and subjecting it to a preliminary purification to free it from dirt and grit. Cellulose is one of the most widely distributed plant constituents—flax, hemp, and cotton consist chiefly of cellulose. The purified cellulose is then placed in stoves, and carefully dried and heated with a mixture consisting of highly concentrated nitric and sulphuric acids. After nitration it is carefully

washed in water, and is then reduced to a very fine state of division in a "beating machine." After being boiled by means of steam and another thorough washing it is ready to be moulded. If not required for immediate use gun-cotton is generally stored wet. Wet gun-cotton is often used instead of dry, but in the wet state it is not so easily detonated.

Nitro-cellulose Service powders are made by mixing gun-cotton with ether-alcohol or ether-acetone, by which process the fibrous character of the gun-cotton is more or less destroyed. A material is thus produced of which the rate of combustion is slower than the original, and is, therefore, suitable as a propellant. After treatment the mixture is pressed or rolled, and is then cut into a suitable form. Propellants of the nitro-cellulose type are used by France, Russia, U.S.A., Germany (army only), and Austria (army only).

Nitro-glycerine was invented by Sobrero in 1847, and is produced by the action of nitric and sulphuric acids on glycerine. Pure nitro-glycerine is a colourless oily liquid, but is often of a slight yellow tint. It explodes when heated to about 360° Fahrenheit. A drop of nitro-glycerine explodes when struck with a hammer on an anvil, and it is very sensitive to percussion. Nitro-glycerine in the liquid form is too dangerous to be used in practice, but Nobel discovered in 1867 that when nitro-glycerine was absorbed by a porous solid it could be used with comparative safety. This explosive is known as dynamite. The porous material generally employed for absorbing the nitro-glycerine is "kieselguhr," which is a special kind of earth consisting of the shells of minute diatoms, and is found in some parts of Germany and in the north of Scotland. Dynamite usually contains twenty-five parts of kieselguhr and seventy-five parts of nitro-glycerine.

The first nitro-glycerine-nitro-cellulose powder was invented by Nobel in 1888, and called ballistite. The principal ingredients are gun-cotton and nitro-glycerine, while camphor is employed as an agent for promoting the union of the two explosives. As camphor does not remain a constant ingredient, and thus leads to chemical alterations, the use of camphor was discarded and aniline or vaseline added. Ballistite is the Service powder in Italy, and is much used for large guns. It was the first successful smokeless powder. The English Service powder used in the Army and Navy is cordite, and was the outcome of the investigations of the Explosives Committee, of which Sir Frederick Abel, the chairman, carried out a long series of exhaustive experiments.

It consists of 58 per cent. nitro-glycerine, 37 per cent. gun-cotton, and 5 per cent. of vaseline. It is known by the name of cordite, owing to the cord-like form it assumes during manufacture. As gun-cotton is not soluble in nitro-glycerine, the mixture cannot be gelatinised without some medium, and for this purpose acetone is used. The gun-cotton and nitro-glycerine are mixed together in the right proportions, and acetone is added and hardened in the mass. After about three and a half hours the correct quantity of vaseline is added to the mixture and the whole thoroughly mixed. It is then passed through hydraulic presses and

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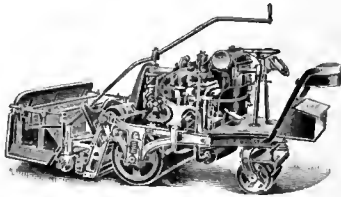
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formed into the cords in which it is used. Propellants of the nitro-cellulose-nitro-glycerine type are used by Italy, Japan, Great Britain, the German and Austrian navy, Brazil, and Argentine.

Modern smokeless powders develop a much larger total volume of gas for the same weight of charge than the old gunpowder, and, therefore, greater velocity of the projectile or bullet is attained than formerly, the gas production taking place gradually during the whole time of the passage of the projectile down the bore. Although the total propelling force is greater it is more regularly sustained, so that the maximum pressure is not increased. In the old powders almost complete combustion of the explosive took place before the projectile had time to move far down the bore of the gun, and therefore the muzzle was much shorter than in modern guns.

We will now deal with the disruptive explosives of group 2, to which nitro-glycerine, dynamite, and gun-cotton belong. Practically every country has adopted picric acid as a bursting charge for shells, under a different name and with certain differences in composition consisting merely in the addition of an ingredient to reduce the melting point.

Picric acid is obtained by the action of strong nitric acid on carbolic acid, and is a most powerful explosive. It is a pale yellow crystalline solid, intensely bitter in taste, has a high melting point, and was largely used as a dye long before its explosive properties were discovered. Eugene Turpin, of Paris, introduced picric acid mixed with collodion in the French Service under the name of melinite. Picric acid solidifies from the melted condition in a closer or denser form than from the water solution, in which form it can more readily be exploded by detonators. Lyddite, which is used in the English Service, is simply melted and solidified picric acid. A disadvantage of picric acid is that when left in contact with metals or oxides it forms very dangerous detonating salts, and therefore it is necessary to varnish the interior of shells, giving special protection to the detonators and taking the utmost precautions to prevent access of foreign bodies while the acid is in the molten state. In order to overcome these disadvantages a new explosive has within the last few years been introduced, and is known as trinitrotoluene or, briefly, "T.N.T." The French Service calls it tofite, the Spanish Government trilit, while the Carbonite Works of Schlebusch call it trotyl. It is obtained by heating toluene with a mixture of nitric acid and sulphuric acid. Toluene is a liquid hydro-carbon obtained along with benzene from coal tar. Trinitrotoluene melts at about 80° centigrade, is nearly insoluble in water, and does not form metallic salts, as picric acid does. It is used chiefly in shells, and has practically superseded picric acid. The Germans use it also with great success in mines and torpedoes, for which work gun-cotton is generally employed. In the Austrian Army and Navy a very powerful explosive has been introduced under the name of ammonal, which is a mixture of trinitrotoluene, ammonium nitrate, charcoal, and aluminium.

Detonators are used for exploding the explosives of the first and second group. Since 1800, when Howard invented fulminate of mercury, and since 1815, when Joseph Egg made the first cap, but little progress has been made in the manufacture of these articles, the only development being that potassium chlorate enters partly into the composition of detonators. For smokeless powders a hotter flame is found essential, and is obtained by adding a combustible substance. A percussion cap consists of a little metal cap or case filled with a mixture of fulminate of mercury and potassium chlorate. When a percussion cap is struck by the hammer of the gun or rifle it detonates and evolves the necessary heat to inflame the neighbouring powder charge. The composition used in percussion caps varies according to the nature and size of the powder charge to be fired. It contains generally potassium chlorate, mercury fulminate, and antimony sulphide, to which ground glass is sometimes added. Detonators are generally made of copper tubing varying in length from one and a half inches up to six inches, and are charged with fulminate of mercury and other ingredients. These detonators are ignited either by means of safety fuses or by electricity. A safety fuse consists of flax, spun and twisted in the same manner as in cord making, having a column of fine gunpowder in the centre. Its rate of burning can be varied from seventy-five to forty-five seconds per yard.

The electric fuse consists of a very small and fine piece of iridium-platinum wire, which is wrapped round with a small piece of fleecy gun-cotton in close proximity to the fulminate of mercury. When an electric current is passed through the fine wire it gets red hot and sets fire to the gun-cotton, which in turn ignites the fulminate, and this, being placed in close contact to the explosive charge, detonates the latter.

The electric fuse is employed in all large siege and naval guns. By this means a round can be fired at the exact moment by merely pressing a button, and all the guns can be fired simultaneously from some central position. It has been found that a small quantity of mercury fulminate placed on top of trinitrotoluene forms an excellent detonating mixture, and a great many detonators manufactured in Germany use this mixture. Mercury fulminate is obtained by dissolving three parts of mercury in thirty-six parts of nitric acid, keeping the mixture at a low temperature until dissolved, when seventeen parts of alcohol are added. The fulminate settles in crystals which are thoroughly washed, after which it is taken to the drying rooms.

The loss of the French battleship *Liberté* and several other explosions brought home the importance of stability of explosives. Although modern explosives are far more stable than those in use twenty years ago, it is necessary to take strict precautions when storing large quantities of explosives. On all British warships cooling machinery is installed to keep the magazines at an even temperature of 70°, as at and below this temperature it can be safely assumed that stability is permanently assured.

THROUGH THE EYES OF A WOMAN

The All-Powerful Present

WE have often been told by philosophers and such-like authoritative people that the true secret of enjoyment is to live in the present and let the future take care of itself. Human nature is so constituted, however, that it is frequently difficult to follow this advice. It is a matter of temperament, no doubt, but even the most sanguine temperament is apt to have its moments of reflection in which woe yet to come conspicuously figure. The odd thing is that at the moment, whether we be inveterate optimists or most pessimistically inclined, we are obliged, more or less, to live from day to day. Probing into the future is too unprofitable, as most of us have proved. It is quite impossible to prophesy the fate of Europe, society, or any individual a year or even six months ahead. I doubt, indeed, if we can do it for as long as that. So at last we have been obliged to curb any tendency to anticipate, and women have been specially constrained this way. Sufficient unto the hour is the evil thereof. It is a good motto, but lately we have been able to substitute the better one of letting the morrow take care of itself. Those women whose men are at the front learnt the necessity for this in the early stages of the war. The very stress of anxiety forced them to look upon no news as good news. It would have been impossible to get along otherwise. A pretty woman whose husband has lately been mentioned

in dispatches voiced this to me a short while ago: "I never now," she said, "look forward one minute after the other if I can possibly help it. It does not work very well in the household, but it is infinitely better for me." And such an exaggeration as regards her house may be permitted to one whose *ménage* runs on oiled wheels, whatever its mistress may say to the contrary.

On a Radical Change

In spite of all we may say and think to the opposite, in spite of the days which inevitably arise when we hardly think of such matters at all, the time comes when we must look for a while on the lighter side of things. It is really necessary, not only for our own sakes but for that of everybody connected with us. A well-written amusing novel can be as good as a tonic, an evening at a laughter-provoking play a rejuvenator. And in our less tense moments we can certainly spare time to marvel at the radical change which has overtaken women's clothes. Things being as they are, it is wonderful how it has come about, but that it has not only come but means to make a definite stay is obvious. Now, this change has not come from Paris. Whatever may be written or said to the contrary, the big *ateliers* of Paris—with a very few exceptions—are not open. It has doubtless been originated by the many model designers, who, escaping from Paris when she was threatened with siege, came over

here, and are working in this country. And if we may judge from the results, they have been surpassingly busy. Our skirts, our coats, and the treatment of our necks are all fundamentally changed. It is really almost bewildering. The advent of the short, wide skirt has already been so widely discussed that there are few words left to say about it. Instead of long, full coats we are invited to consider short cut-away models verging towards bolero type. And, greatest change of all, we are told that bare throats must not be seen during the daytime. Those of us who have grown attached to the collarless blouse and its feeling of freedom and comfort will no doubt dislike this new fashion intensely. Still, the possibility is that in the shortest while from now we shall all be swathed up round the throat in mummy-like fashion. The turn of the year and the approach of spring with—it is to be hoped—sunshine makes clothes-buying a necessity, and we shall assuredly exchange old lamps for new.

The Teaching of New Trades

Whatever may happen in the immediate future, when brighter days should certainly dawn, the past few months have not been easy ones for London dress-makers and their workroom staffs. It is difficult, indeed, to know what many of the girls would have done if the Queen's "Work for Women" Fund had not come to the rescue in very practical fashion. With the aid of the Central Committee on Women's Employment numbers of dressmakers have secured work which has literally saved them from starvation. They have become flannel-belt makers, shirt makers, and sock makers, and have learnt their new trade in remarkably quick time. Forty girls are now working full time at the Committee's Test Workroom in Piccadilly and over seven thousand are being employed on a large War Office contract for regulation shirts for the Army. It is not an easy thing to learn a new trade in a limited space of time, and at first, from all accounts, the organisers of the work had a very difficult task. They were absolutely determined, however, to make the scheme a success, and were never daunted. An excellent system of dividing the work was adopted. It was soon found that while one girl was good at sleeves another was expert at button-holing. Each girl, therefore, was set to do the task at which she was best, and shirts have often been the work of four or five pairs of hands in consequence. Sock-making, again, under the Committee's guidance has become a great industry. A contract for over two million pairs of socks has been undertaken, and it is estimated that through it over twelve hundred women will be employed weekly till July. The spectre of unemployment amongst women is a very real one, but methods such as these will do everything to lay it. For the big idea of employment—not charity—is the motive underlying all appeals on behalf of the Queen's Fund.

More About Books

No rival to the Camps Lending Library will be found in the War Library, which makes its appeal from Surrey House, Marble Arch, London. To this address the public are asked to send all the books they can spare for the use of sick and wounded soldiers. It is in this last respect that the difference between the two libraries lies. Though they agree in their request for as many books as possible, their purpose is at variance. Quoting from the Secretary of the War Library's letter, they supply the sick, while the Camps Library supplies the strong. The War Library appeals for magazines as well as for books, and hopes that these will be forthcoming as quickly as possible in view of the large number of wounded now being brought to England. The importance of the part cheerful books and magazines play in a soldier's convalescence can be gauged from a letter written by Sir Arthur Sloggett, Director - General, Medical Army Service, referring to the Library's work. In it he says: "We shall be only too glad officially to recognise the generous efforts which you are prepared to make in collecting and supplying literature for the hospitals." As a matter of fact, this work was started in August, since which time hospitals in France, as well as in Great Britain, have received a number of books. In common with many things, however, it is one thing to start a good work and

another to maintain it. It is with the latter effort that the crux of the matter lies, and it is everybody's business to help if they can in one degree or another.

In the South of France

The Allies have much in their favour, and not least is the fact that the Riviera will be at the service of all the wounded soldiers who can manage to be sent there. Even the shortest while of bright Riviera sunshine is the best tonic known to man. A feeling of health comes with the first glimpse of blue sea, bluer sky, and the golden fruit of the orange groves. Life is not without its compensations after all. This morning's mail brought a letter from the management of a Nice hotel enlarging upon the advantages of the Sunny South at this time of year. Chief amongst them was the fact that the season would be "Germanless." The Teuton and the Côte d'Azur go together remarkably badly, and nothing spoilt Monte Carlo so much as the German host it attracted year after year.

This German invasion spelt the fashionable doom of the Principality. Every French hotel proprietor recognises this, and several in the past took steps to stem the German tide, following the example of the brilliant Parisian who can make or mar the fortune of a town at will.

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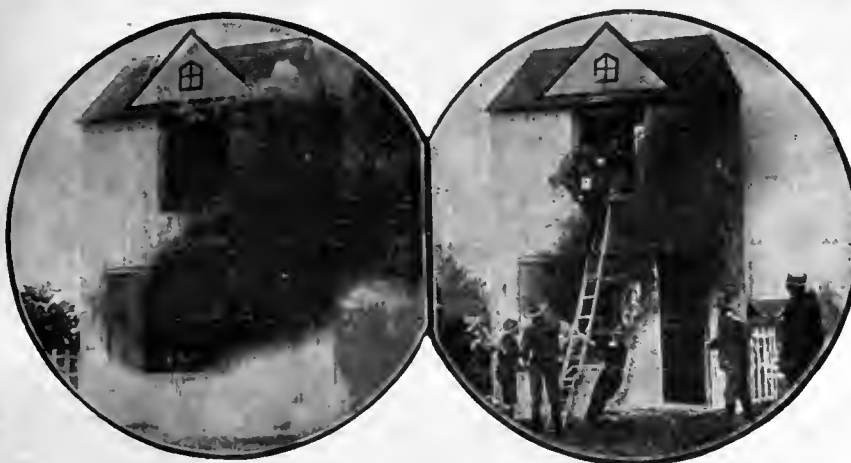
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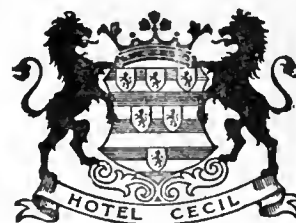
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THE WAR BY LAND.

By HILAIRE BELLOC.

NOTE.—This Article has been submitted to the Press Bureau, which does not object to the publication as censored, and takes no responsibility for the correctness of the statements.

In accordance with the requirements of the Press Bureau, the positions of troops on Plans illustrating this Article must only be regarded as approximate, and no definite strength at any point is indicated.

THE forcing of the Dardanelles is by very much the most important event strategically which we have seen in this war since the battle of the Marne. It is evident that if this operation be successful we have begun to solve, long before the end of the winter, the main problem of Russian equipment and munitioning, and at the same time released foodstuffs of which our market is in need. At the same time we have released the Balkans from their hesitation, we have left Austria without an object towards the south-east, we have cut off all supply available for modern war to the Turkish forces in Asia.

Politically the event is of even greater magnitude.

The whole of this week, however, these operations have been naval in character, and do not come within the scope of these comments.

Upon the western front there has been too little movement to make any commentary worth while, and so far as that field is concerned I shall deal this week only with its most important aspect at the moment, which is the call for ammunition. Of movements upon any general scale we have no examples except upon the eastern field, and with this, therefore, I shall begin my comments this week.

THE EASTERN FRONT.



The eastern front continues to be what it has been for the last two months, not only that field of

operations in which there is most movement and chance for a decision, but that upon which the future of the campaign for the moment most obviously turns.

It presents the same strategical interest which it has presented since the beginning of February, when the triple action was engaged of holding the Russians in front of Warsaw and of attempting to push them back upon either flank. But in using this phrase it is necessary to modify one conclusion to which a certain amount of public criticism has come, presumably in error. Men speak as though the action along the whole eastern front from the Baltic to the Roumanian border was one united conception, an effort to push in the two flanks of the Russian army so as to compel the centre to abandon the line of the Vistula and the all-important bridge-head for the same, which is politically the capital of Poland—Warsaw. It is a false judgment. The enemy's effort on the left wing of the Russians in the south is not a strategical effort balancing what he is doing upon the right wing of the Russians in the north. It has a different motive, and it is proceeding in a different fashion.

As has been pointed out more than once in these columns, the effort in the south is probably political: though political only, of course, in the sense of a political action affecting later strategy, the enemy is pushed into the Bukovina in order, as we have seen, to intercept any potential combination between the Roumanian forces and the Russian forces in Galicia. But the hope by this effort to turn the Russian effort in Galicia and to attack it seriously in flank is not probable, for reasons which I hope to show later in this article.

But in the north, by far the most important field, what he set out to do was undoubtedly to isolate Warsaw, and in this attempt we still have to follow the main point of interest this week.

THE ATTEMPT TO FORCE THE NIEMEN AND THE NAREW.

The Battle of Przasnysz.



I must, at the risk of wearying the reader, repeat the elements of the position in order to make clear what has taken place in the past week.

Warsaw is the meeting-place of the railways east of the Vistula. Of these lines, the southern ones, marked 2, 3, and 4 upon the sketch, especially 3 and 4, lead to Warsaw from the more important bases. But the northern one, marked 1, leads to the capital of Petrograd, connects the northern armies upon the East Prussian frontier with the main force near Warsaw, and if cut would isolate Warsaw in some degree, and would check in some measure its flow of reinforcements; but, most important of all, would lead in a few days to the cutting of the remaining railways. For there is no natural line and no fortified line that would save Railways 2 and 3, and ultimately 4, if once this sheaf of railways were entered by the enemy. (The rivers are not transverse, and there are no works north of the Brest-Ivigorod line.

We know that the enemy has done everything to take Warsaw by direct attack along the front A—B, and has failed. We know further that since February 7 he has changed his plan, and while only holding along A—B, has determined to strike for the railways behind Warsaw from the province of East Prussia; that is, along the arrows C.C.C. Lastly, we know that there lies between this attack from C.C.C. and the sheaf of railways the fortified line represented by the Rivers Narew and Niemen, along which are stretched the strongholds from Kovno in the north to Neogeorgiesvk in the south, passing by way of Grodno, Osowiecs, Ostrolenka, &c.

Let me also repeat the main point of the whole thesis, since it is that upon which current opinion in this country has been, to some extent, confused. *Unless the Germans pierce this fortified line, and, having pierced it, carry on, they have been defeated in their general plan, and would have been stronger for not having undertaken it. If, on the contrary, they pierce this line and carry on till they reach the railways, they have succeeded in their plan.*

It is exceedingly important to grasp this perfectly simple point, not because we are noting the scores in a game, but because we are watching a military action upon which our own fate to some extent depends.

Unless the German Headquarters had a plan of this kind, it had no plan at all—and that is not to be believed. Merely to clear the enemy out of East Prussia is not a military object, because it promises nothing for the future of the war. But to isolate, and ultimately occupy, Warsaw promises everything; for, holding that nodal point, you prevent further offensive action by the Russians for a long time to come, and you are free to bring many of your forces now in the East back westward, as also to use in the West your last new formations when they reach the field.

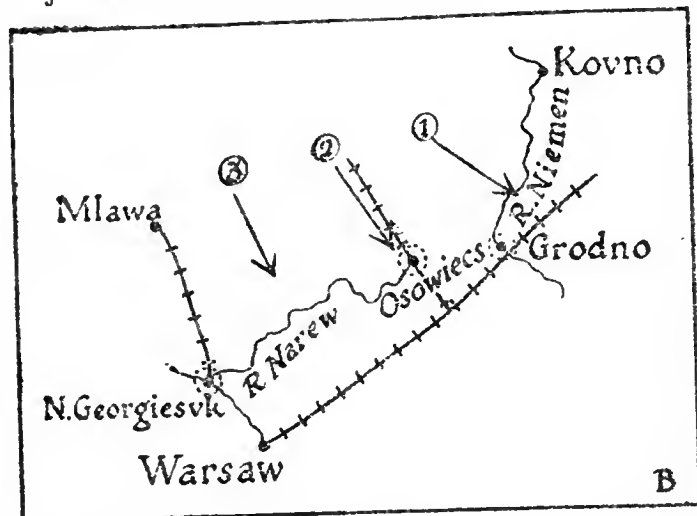
But it is in the West that the only final decision of this war can be achieved. Therefore do the Germans particularly intend to take Warsaw; and to take Warsaw on the lines of the present effort means to pierce successfully and continuously through the defending line of the Niemen and the Narew until they reach and cut the sheaf of railways. To do that would be to take Warsaw in reverse. To fail to do it means that they have lost this movement again and that they have wasted energy for nothing.

Let us keep that quite clear. Their local success in enveloping one Corps a fortnight ago

does not affect the greater issue. The enemy must in this field win or lose as a whole, and an offensive which fails in its purpose is not something which cancels out in war: it is a minus quantity. An offensive which fails leaves the attack weaker than it found it.

With all this postulated as a foundation for our judgment, let us see how the struggle now stands in front of this Niemen-Narew line. The issue is by no means yet decided, but the news of the past week is, upon the whole, favourable.

Three main points of attack marked the objectives of the German advance.



(1) A point a little above Grodno and outside the fortifications of that stronghold.

(2) An attack upon Osowiecs, and an attempt to pierce through and strike at the line beyond.

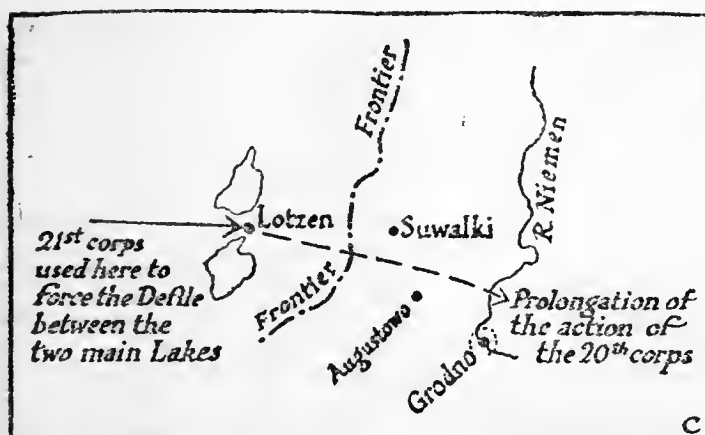
(3) Of particular importance, an attack upon the sector between the Mlawa railway and the town of Ostrolenka. This last is the most perilous and the most vital of the three movements, because the nearer to Warsaw the enemy gets on the railways, the more powerful is his effect.

I will take these three issues in reverse order to their present value in the campaign.

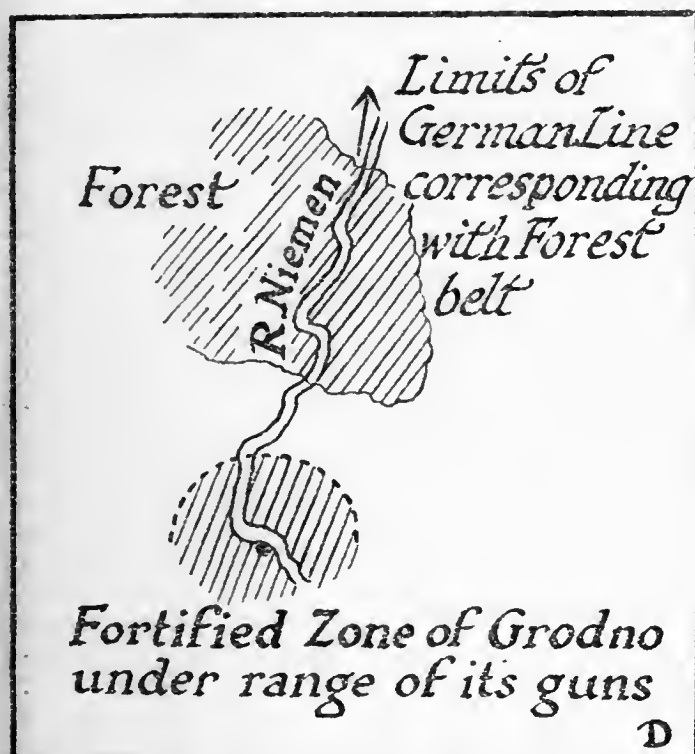
(1) *The Attack upon Grodno.* This attack alone of the three has, up to the present date, succeeded in piercing the line, but it has not pierced it in great numbers, and it has not pierced it thoroughly at all. We should even have the right to regard it as a diversion in the general plan were it not that there has been used upon this sector the best of the ten Army Corps which the Germans have concentrated for their great effort from the north. It is the same body as that which had proved the deciding factor in the enveloping of the Russian 20th Army Corps the other day. It is the German 21st Corps, in garrison during peace time upon the French frontier, and corresponding somewhat to the French 20th and 6th Corps.

But though a body of such excellence has been used right up here on the left of the general effort, we must not conclude that that point was therefore regarded as of special importance by the enemy. We must rather decide that when the concentration was effected three weeks ago the 20th Corps was put where it was in order to act where the hardest work had to be done in forcing the defiles between the lakes. That was apparently the task assigned to it. And this being so, it could not but appear when the Prussian frontier was crossed in the region of Suwalki and Augustowo, even though that region were not after the first operations the chief theatre of the struggle.

At any rate, the attack upon the Niemen by



this Corps in this region has not, so far, come to very much. The river was crossed, but the crossings were not, by the last advices received, decisively maintained. We have no direct evidence at the moment of writing (Tuesday evening) that the bridgeheads beyond the river had been retaken by the Russians; but we have got the mention of fighting upon the left bank in the last few days—that is, upon the German side of the stream—and it is self-evident that no very large movement across the Niemen here could be taken with a single Army Corps, cut off from help from the south by the fortress of Grodno. Grodno would either have to be taken or masked by a large force before the passage of the river was securely held. The passage of the Niemen here has been effected at the point where the Augustowo forest gets up to the river, and it is under the cover of the



forest that the crossings have been made. What we do not know is whether behind the crossing thus effected any considerable bodies of the enemy are prepared to move. If they are, the attack here, north of Grodno, may be serious. If they are not, it will have to fall back with the retirement of the other two efforts further to the south and west. All one can say is that, according to the news already received, the crossing of the Niemen north of Grodno, though effected over a stretch of fourteen miles, appears to be insufficient in strength and not developing. We must wait for further news to judge whether it can progress or no.

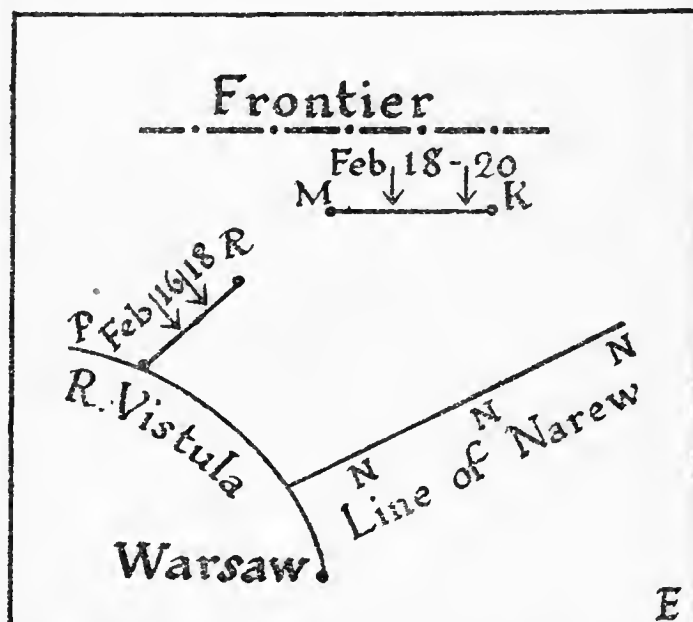
(2) *The Attack on Osowiec.* The attack on Osowiec is straightforward enough. The enemy here has brought up his principal siege-train and is at present occupied in attacking the western

sector of the ring of forts, exactly as he attacked them last October, when he suffered defeat in his attack. He is acting now with very much larger forces, but with no better guns. (We must wait for better proof of that 420 millimetre.) We have no news of the result one way or the other, except that the attack by the siege-train has now proceeded for something more than a week without our hearing from the enemy's side of any result yet following on it.

(3) *The Fight round Przasnysz.* The fight round Przasnysz is much more serious, and we have more details of it to hand. In this third sector the enemy has clearly failed. But I will again modify the impression which such a statement might make, by pointing out that the action, as a whole, from Grodno to the Vistula, has not yet been decided, and that we must not jump to the conclusion that it is, merely because there has been a rather pronounced German retirement in that sector of it which most immediately threatened Warsaw.

With that proviso we can proceed to the description of the action.

Upon the same days which saw the defeat of the 20th Russian Army Corps at Augustowo and the approach of the enemy to the fortified line (from Tuesday, February 16, to Thursday, February 18), a strong movement was apparent upon the extreme left of the Russian positions along the rivers. The following diagram will



make clear what was tried. The East Prussian frontier being represented diagrammatically by the line A—B, and the line of the Narew by the line M—N, the Germans were advancing up to and upon the front P—R (letters which represent the two towns of Ploetz, upon the Vistula, and Rachiaz, about thirty miles to the north-east), Warsaw and its railways being some sixty miles away up the Vistula. Our ally informs us of the checking of this advance upon the front P—R on or about this same date—February 18. It is probable, however, that the pressure here being exercised was halted quite as much at the will of the enemy as at that of our ally, for on that same day—February 18—upon another front of about the same length to the north between Mlawa (represented by the letter M) and Khorzele (represented by the letter K) was discovered a large concentration of two Corps pointing southward directly towards the fortified line of the Niemen. Against this latter and dangerous concentration, separated as it was by

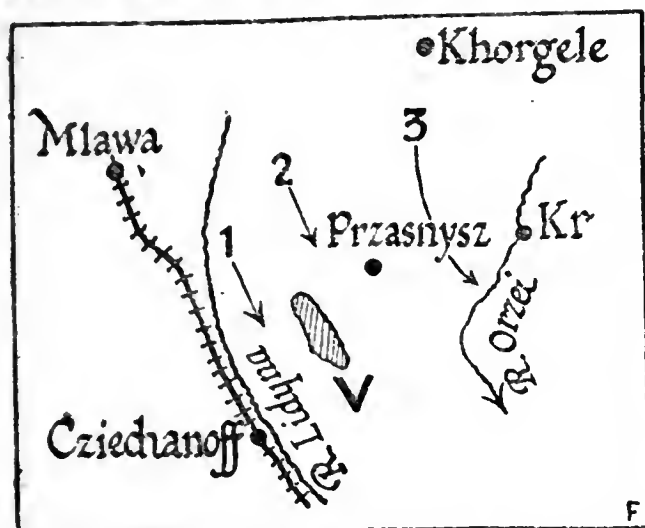
the railway from Mława to New Georgievsk, the Russians immediately moved up from their fortified line N.N.N., and the two bodies, thus advancing, met in the neighbourhood of Przasnysz (which I indicate by the letter P).

The action that followed might well be called the action of Przasnysz by those who have the ability or the temerity to pronounce that name, for upon the possession of this place depended the result of the struggle.

There were two reasons for this: First, that Przasnysz stands in the middle of the dry upper watershed between the River Orzec and the River Lidyna, and has therefore, in that marshy land, become the centre of diverging highways which lead towards the south; and secondly, because Przasnysz happened to become the "nucleus," as it were, of the battle.

Often when a great action is joined some one point becomes a nucleus of this sort, so that its retention or loss by one side is equivalent to success or failure in the action by that side. And this was the case with Przasnysz.

Upon Saturday, February 20, ten days ago, the rapid German advance forced a Russian brigade, which was acting as an outpost, back upon Przasnysz, passed on east and west of that town in two bodies, one along the arrow I have



marked I, the other along the arrow I have marked II, while a third body along the arrow marked III made for and held the passages of the Orzec River. All these bodies, pressing south, had about four days' march in front of them if they were not arrested before they should reach the Narw and the fortified line. It so happened that between the lines of advance I and II there is a ridge of rather higher land in that endless flat snow-covered waste, which may be conveniently called The Ridge of Voliawerslorska, which lies just beneath it about half-way between Przasnysz and Cziedanoff. I have indicated this ridge by the letter V and the shaded mark. The Russian advance seized this ridge and held it throughout that week-end and on until Wednesday, February 24. Their tenacity, though almost surrounded and violently attacked from both sides of the high ground, was what decided the battle. On that Wednesday, the 24th, the Germans got into Przasnysz, taking there twenty guns and a number of prisoners, which seem to have included something like half the brigade which had been pressed into that town from outside. But the Russian force upon the ridge still held; and it was upon the same day, just at daybreak, that the main Russian advance from the south against the

pressing German line began. This advance was stretched upon that morning of Wednesday, the 24th, from the point V upon the map shown to the point marked Kr, which stands for the town of Kraznosielec, upon the Orzec. It was first successful from the right, forcing the River Orzec, in spite of the German 36th Division of Reserve, which was holding the passages. On the next day, Thursday, the 25th, the centre of the German line was pushed back on to Przasnysz, from which it had moved forward somewhat the day before, and this Thursday was the hottest day of the action. The pressure thus effected upon their centre forbade the Germans to prosecute as vigorously as before their attack upon the ridge north of V, and on either end of this the Russian forces moved up in rescue of the advanced forces which had so successfully held that height. By the morning of Friday, the 26th, it was apparent that the German line was beginning to waver, and in the course of the day the first Russians entered Przasnysz, and the sides of the ridge to the west of it were already cleared. But the action still swung, and it was not until the whole of the Saturday had been passed in the most furious fighting in the open that the Sunday morning saw the full retreat of the German line.

This retreat has been called, rather unjustly, a rout. That it was not a rout is sufficiently clear from the fact that of the whole two Army Corps 10,000 prisoners alone remained in the Russians' hands after the full retreat had begun, and we presume that most of these were wounded. But it was a hurried retreat, as is again proved by the confusion of the various units; and by Monday morning the success of our ally along this sector was complete.

We may sum up, then, and say that the great German advance on the Narw and the Niemen has at the moment of writing achieved the following position:—

From twelve miles north of Grodno to about twenty-six miles north of that fortress, in a region where dense woods cover both banks of the broad river, certain detachments, so far small, have effected a crossing. We have not heard that they have yet issued from the woods, and strong efforts are being made to thrust them back.

Lower down, in front of Osowices, the effort to break the fortified line is taking the form of a bombardment of the eastern works of that fortress.

In the centre, the sector most dangerous to Warsaw, the sector of which Mława is the principal town, the enemy has received a severe check, losing Przasnysz, which was the centre of his action, and falling back in full retreat towards his own frontier.

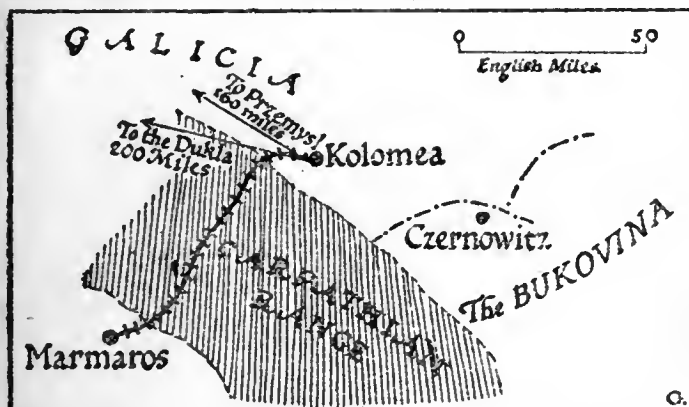
That is how the third great bid for Warsaw, the attempt to take it in reverse, stands at the present moment; or, rather, stood upon Monday morning, the news of which was the last to have reached London at the time of writing.

THE BUKOVINA.

I said at the outset of these remarks upon the eastern front that the Austro-German move into the Bukovina did not promise any great strategical result, and that because the taking of the Galician Russian army in flank was hardly possible from the Bukovina alone, or at any rate from that portion of it now occupied by the enemy's armies. I would like to make this point clear, because while it is but a theory, and a theory in

contradiction with certain views that have been put forward with admitted authority, it seems to me at the moment the best theory.

Anyone holding the Bukovina, and particularly Czernowicz, holds, as I have shown in past numbers of this paper, the communications whereby Roumania and the Russian army in Galicia might join hands. It holds the knot in which the railways join. But unless more than the Bukovina is held, there is not a sufficient avenue of supply for the working of large armies round upon the flank of the Russians in Galicia, and the consequent freeing of the northern Carpathian passes from the invader, let alone for the relief of Przemyśl. You are dealing here with the thickest portion of the Carpathian chain, and railways are, especially in a winter campaign, of the first importance to your supply. Now, the only railway of this region crosses the Carpathian chain on the line between Marmoras and Kolomea. There are railways leading up the valleys of the range, with its dense woods and poor roads, but there is no crossing the ridge until this Kolomea railway is reached. From Kolomea to Przemyśl itself is a matter of 160 miles, and to the Dukla, as the crow flies, a matter of nearer 200 miles. A firm hold well north of the Bukovina by the enemy, which should include the whole of this line across the mountains, will enable supply to reach a large



army which could work against the flank of the Russian armies to the west in Galicia, and thus turn the grip of the Russians upon the western Carpathians. But until, or if, the Austro-Germans push beyond the central Carpathians and occupy much more than the Bukovina alone, the avenues of supply seem insufficient for any such attack.

Since writing the above, news has come that the Austrian forces are as far north as beyond Stinislund, and even if checked there it is clear that the railways into the plain are now in their hands, which will, if the position is maintained, change all these conclusions.

THE CALL FOR AMMUNITION.

If you were to ask off-hand a man of good observation, well educated, and perhaps one acquainted with war and yet not a soldier: "What is the prime factor at this moment in the problem of the trenches?" he might be at a loss to answer you, or, rather, many such men would give many different answers. But a soldier on the spot, at any rate a soldier anywhere near the higher command, would almost certainly reply: "Ammunition, and especially heavy gun ammunition."

This is the point we have to consider most carefully from now onwards, and it is one of these points in which public opinion and a fair grasp by civilians of the conditions abroad is of great value. Just as it was of value to point out that

cotton is to-day gunpowder, and that the cotton that went into Germany did not only make shirts, but also killed British soldiers, so it is of importance to insist now upon this business of ammunition. For public opinion well awake to the one as to the other will support all the public action necessary. Whereas public opinion confused or ignorant upon these essentials sometimes leaves the authorities without driving power behind them.

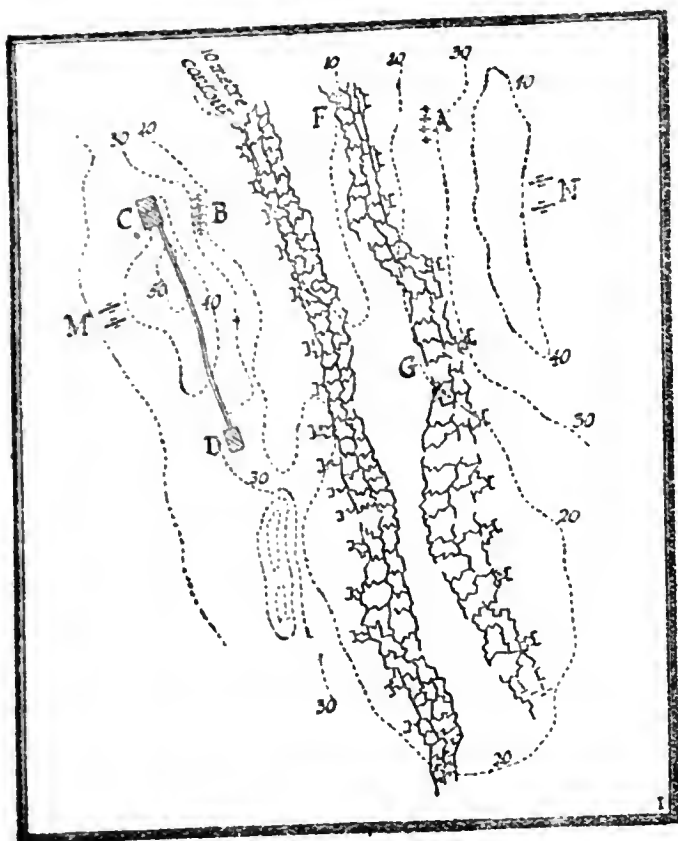
The reason that ammunition, and in particular heavy gun ammunition, is so important is this: In the other factors of the trench problem (to give it a short but convenient name) European armies, such as the Allies and the German, are fairly enough matched. But in the provision of ammunition, and particularly of heavy gun ammunition, we can, if we choose, dominate more and more.

The fire discipline of the Allies is superior to that of the enemy, and this is particularly true of the British contingent. But the field of fire has become so very much shorter than was expected that this advantage is more or less eliminated. I do not mean that the excellence and steadiness of the shooting is not tested quite as much over a narrow field as a wide one, but I do mean that troops which have now been exercised for months in the art of stopping a man before he covers two hundred yards have got to be much of a muchness.

In the construction of trenches, from the detail of their comfort to the tracing of their position, the enemy was altogether superior to the Allies some months ago. The Allies are now at least his equal. In the sanitation necessary to this kind of siege warfare the Allies are probably the superiors of the enemy. We have reason to think that his losses from sickness are far superior to ours. In machine gun work we were his inferiors in the beginning and are said to be now his equals. In field gun work the Allies had, and maintained, I am told, superiority both in rapidity of fire and in accuracy. This is said to be particularly true of the French, who certainly had the best weapon, and, what is more probable, the best tradition. But take the thing all round, and there does not seem, according to the evidence of those who have suffered actual experience in the field during the last few months, to be now any chance of conspicuous difference save in this matter of heavy gun fire, and what that means can perhaps be most graphically presented to the eye by an ideal section of the line.

It is, of course, no more than the simplified suggestion of ground which takes an infinite variety of shapes in this four hundred miles of line. But, such as it is, I hope it will serve to show very roughly how the trench fighting is conducted.

The first element in that fighting is, of course, the line of the trenches themselves. Let us suppose that in this section they run as we see them in the accompanying sketch. In reality, of course, the ultimate lines of the two opposing forces are much more regular, especially where there has been heavy attacking and counter-attacking, and a real plan would be confused with a number of empty trenches abandoned; but for the purpose of my illustration these two roughly parallel lines will serve to stand for the opposing lines in a particular section of the field. These advance trenches are very narrow ditches, deep in comparison with their mouths, provided every few yards



with interruptions of earth which prevent their being swept along their whole length with fire in case an enemy gets up to the line, and also provided with hollows underground where men not actually on the watch can rest and sleep. The trenches do not consist of one individual line, but of a complex, one set behind the other, sometimes two, sometimes three, sometimes more than three, though there are sections in which the nature of the ground and of the defence is such that retirement to the places behind the trench where the stores of ammunition and the quarters of command are can be effected without a complexity of this kind. From the front line to the second, from the second to the third (if there is a third) trenches perpendicular to the general line and zigzagging so as to save those who pass through them from enfilading fire (that is, fire along the length of the trench) are constructed. These are the trenches of communication, longer or shorter according to the kind of cover afforded and to any one of a thousand accidents of ground.

These two systems of trenches opposing one the other (which would look, upon a complete plan, more like cracks in glass than anything else) fight each other in a number of different ways. The object of all such fighting being, of course, to make one's opponent abandon his trenches, or, better still, to kill, wound, and capture him in his section of trench as you carry it. Let us see how this can be accomplished.

Supposing the opposing forces possessed nothing but rifles and stores of explosives, then they would fight only thus: They would continually watch with periscopes and through small openings on the edges of the trench the movements of their opponents, shooting at any object that showed itself. From time to time a body would leave some section of trench and try to rush across the open. They would choose for this a favourable moment, at dusk, for instance, or in the dark, or perhaps when they thought their enemy was off his guard. Against such a rush the defenders would pour as heavy a fire as they could, and in most cases they would stop it, particularly as in front of the trenches are constructed obstacles of all

kinds, especially networks of barbed wire stretched intricately among a number of posts.

It is obvious that with fighting of such a sort the two forces would pretty well immobilise one the other unless there were overwhelming numbers upon one side. Where the trenches are fairly close small bombs thrown by hand or grenades can be used as weapons of offence to clear or to confuse the opposing trench, and other devices, such as trench mortars and spring catapults, are used. The impossibility of trench fighting being decided between equal forces in this fashion is heightened by the use of machine guns, which are so posted as to rake the approaches to a trench and to mow down the men caught in the wire entanglements in front of it.

But to such small arms there is added the field artillery, a weapon firing a shell about three inches in diameter and covering at its point of explosion a radius of, say, something like a cricket pitch. The concentrated fire of a number of these guns will, of course, make any piece of ground untenable. And if you can concentrate such fire upon a particular attack you make it suffer even more severely than rifle fire even makes it suffer. This fire from field guns has the further use of keeping down the firing power of the trenches opposed to it. It "searches" them, and by carefully timing the fuses of the shells it can cause considerable losses even through the very narrow entrances which are all the trenches present to the surface. If one side had field artillery and the other had not, the side which had field artillery would ultimately, though slowly, break the resistance of the trenches opposed to it. But the effect of these shells, with their flat trajectory skimming the surface, is ten-fold more against an advance in the open than it is against men dug in. These field guns must further be used very accurately, for they fire over their own men and are posted in concealed positions well behind the line, their range being at an extreme not more than six thousand yards and their useful work mostly done at ranges between one thousand five hundred and three thousand yards. They also work against one another, a battery of such guns attempting to keep down the fire, and, if possible, to destroy, other batteries opposed to them. In such a plan as that which I have given you might have a field battery concealed in some such position as A, and working against another field battery concealed in some such position as B. Both A and B would be used to fire at the trenches opposed to them over their own men, to sweep the zone between the trenches in case of an attack, and to shoot at each other, and to keep down each other's fire, or, if possible, to destroy each other. These field guns also shoot at marks well behind the lines on which they are established, as villages or posts where they believe that men are concentrated for relieving the men in the trenches; they fire at the roads along which transport can come—and so forth.

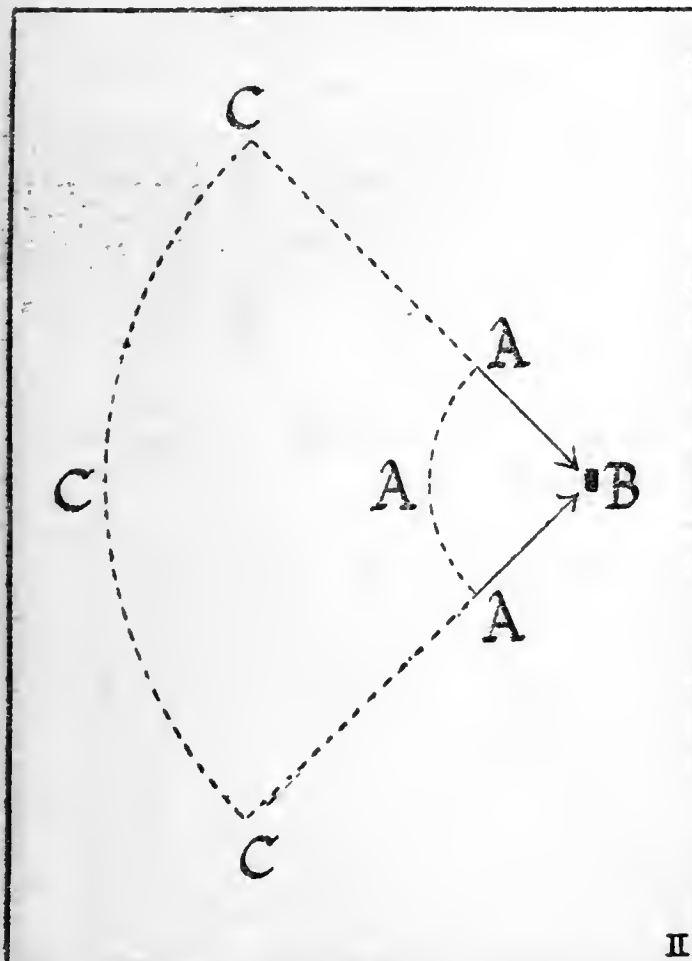
Thus A will shell a village placed at C, and will shell the road leading from C to D, another village or place of concentration, but with field artillery alone and fairly matched on the two sides the trench problem, as I have called it, will not be solved, because with the broad trajectory of such weapons, and the comparatively small range and the comparatively small radius of action of the shell, their true work is rather against men in the

open than against men dug in. It is in the third kind of weapon that the solution is rather to be discovered, and this kind of weapon is the heavy gun. The heavy guns are concealed just as all the others are; positions are chosen for them well behind the lines where they are effective on account of their much longer range: 6,000, 7,000, 8,000 yards or more are available to them as ranges of perfectly accurate fire, and their effect against men in trenches is something very different, and that for the following causes:

(1) In the first place, what their shells do when they fall is on quite another scale from the shells of the field artillery. In the more numerical computation (which is not everything) they have an effect varying with the size of their calibre. A six-inch gun does not fire a shell twice as effective as a three-inch gun. It fires a shell *eight* times as effective. But one cannot put the thing numerically at all, because a six-inch shell falling into a trench has far more than eight times the effect on the defenders, both in actual losses and in the confusion caused, than a three-inch shell.

(2) These heavy shells destroy a trench where they fall. They "knock it to pieces." They batter the walls of earth and make them fall in; they open big craters, ruining the spade work in their neighbourhood, and they create a state of affairs which cannot be repaired while the shelling is going on.

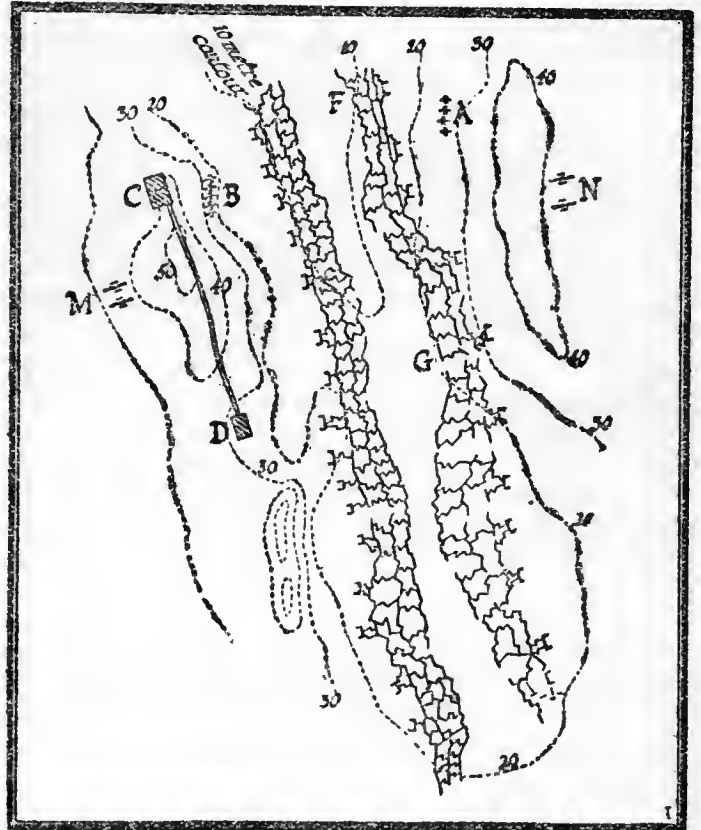
(3) In the third place, they are much harder to discover, working as they do at a long range and with a higher angle of fire than the smaller pieces. They can be concealed, not only by artificial methods, but behind considerable rises of ground. It is obvious that the longer the range of a piece the larger the area you have to search in order to discover it.



Pieces with such a radius as A—B firing at a mark at B must be somewhere along the line

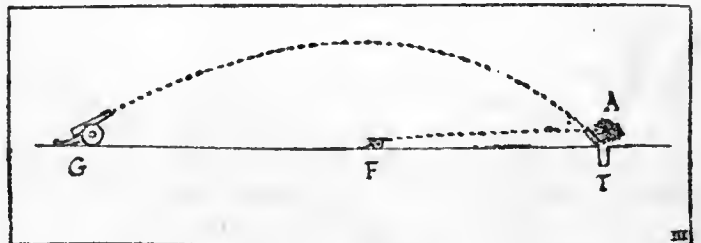
A—A—A. But pieces with a range of C—B can be anywhere along the much more extended line C—C—C, and their choice of concealment is therefore much greater.

(4) The big piece is not disturbed by rifle fire or by field gun fire or by any weapon except its own peer. I have, for instance, a battery of heavy pieces behind the hill at M. It is well concealed, and it can shell, with disastrous effect, the whole line of the enemy's trenches between F and G, and nothing can knock it out except a similar body of the enemy's, similarly concealed at N. The only way in which the guns at N can knock out the



guns at M is by finding out exactly where they are, whether by their flashes, which ought, if the concealment has been properly managed, to be invisible, or by air work, and it is, in point of fact, air work alone which is of any real use in this kind of struggle.

(5) Perhaps the most important of all the advantages of the heavy piece after the effect it has where the shell falls is the angle at which the shell falls. A heavy piece firing at a range of several thousand yards comes down upon the trenches from above, and the effect is largely proportionate to the angle at which the blow falls. Thus, we see in this diagram how the trajectory of a field piece at F exploding a shell at A



above the trench T will do a certain amount of execution, but the heavy gun at G, firing along the trajectory G—A, comes right down on to the trench with a very different and much more active blow. At very long ranges it has the effect of falling almost perpendicularly, and with an accurate aim, of destroying all the work and most of the mind within it.

Now, these principles being grasped, let us add to them the following conditions of the campaign in its present phase:

(a) The air work of the Allies has now established a definite superiority over that of the enemy. It is one of the most notable features of the war, and perhaps one of the least expected, and its success is largely due to the excellence of the British work in this field. Therefore, the Allies do find the positions of the enemy's heavy guns more rapidly and more often than the enemy finds the position of ours.

(b) The blockade puts the enemy at a disadvantage which increases with time. All shells need copper bands to engage in the rifling of the piece and to give them the twist upon which depends the accuracy of their fire. Now, copper, though the enemy is not yet actually short of it, is giving the enemy concern. His fear for the future makes him consider every shot, and the blockade will now have another effect more slow in its development. Every great shell is propelled with an expenditure of cotton of so many pounds. Of iron with which to make the shell, and of nitrates with which to make the explosive within the shell the enemy has no lack. But in copper he has long been hampered, and he will now be hampered in cotton. The heavy French artillery, which in this region quite dominates that of the enemy, was used lavishly. It was not only used to batter the trenches and to cover the assault, but also to create a ditch or zone of impassable ground *behind* the enemy's trenches, so that he could not bring up reinforcements or fresh ammunition. But to act in that way the commander must feel no sort of anxiety for his reserves of ammunition. He must be as prodigal with it as though his supply were infinite.

It is here that this all-importance of a great supply of heavy ammunition comes in. The side which is quite free to use as vast a supply as it chooses must ultimately have its will over the side which is hampered, and counts every shot.

But here the reader may say: "I can well understand that the enemy will be increasingly hampered in his production of heavy ammunition,

but why should this question trouble to arise, and in particular to the British, who have the markets of the world open to them?"

The answer lies in the fact that the production of a shell is so very much slower a business than the employment of it in action.

I was present the other day, by the courtesy of one of the contractors for ammunition in the North, at the manufacture of a number of five-inch shells in an enormous factory (used in time of peace for the production of very different machinery). Some hundreds of men were turning and pressing the cases of five-inch shells. I saw the cutting tool slowly paring down the surface of the thick metal, and I considered as I watched that tedious process how, when the cylindri-conical body was at last completed, its copper band attached and pressed in and smoothed down, its interior filled with the explosive, its fuse attached, and the whole long business come to its conclusion, I might see that shell run into the breech of a five-inch gun, discharged, and hear its explosion miles away, all in as many seconds as it had taken hours to make. The big shed in which I watched this process was working to produce, I believe, 3,000 such shells, and I was told in how many days they would be delivered.

There is needed for the proper supply of the heavy guns, and, therefore, the chief factor in a decision upon the West, all the heavy gun ammunition that the whole resources of the nation can turn out at the utmost speed and with the most vigorous resolution and skill. There can never be too much for the appetite of the great pieces. There can only too easily be an insufficiency or a hitch, and on the continual increase of that supply, and on the swelling and further swelling of its stream depends the immediate future of this country more than on any other single factor. One could almost wish that half of the energy devoted to the very satisfactory results of voluntary recruitment could be turned on to emphasising and re-emphasising this all-importance of the supply which the heavy guns are hungry for, and for which they will clamour when the hour for the advance has sounded. For there lies the key.

THE DURATION OF THE WAR.

II.

WE have seen that three material factors must be considered in any judgment, or rather guess, upon the possible duration of the war, and that these were: (1) the factor of wastage—in supply as in men; (2) the factor of numbers—that is, of recruitment upon either side and of equipped recruitment; and, thirdly, the geographical factor—that is, the effect upon the duration of the war of the seasons, of varying elevations of land, natural obstacles, the soils in trench warfare, etc.

To these must be added, in conclusion, what sometimes proves the most important thing of all towards the end of a war—the moral factor.

With the first of this series we dealt briefly last week. Let us turn this week to the second.

Before entering the subject again, however, it is necessary to repeat this warning: That no guesswork upon this matter has any finality. All one can do is to state the elements upon which a judgment turns; to attempt prophecy in the matter is gratuitous folly. The whole thing may be compared to what a man might judge of the chances of a good eleven pitted against another eleven of equally proved merit. He could only say in the early middle of the game: "The wicket being what it is, the score standing as it does, the past form of either team being such and such, I take it that the end will be so and so, and will be reached in such and

such a time." He does not mean by this to assert; he is only stating a probability more or less well founded, according to the evidence he brings forward.

To this main criticism I think a second should be added, particularly important in the case of any military judgment. It is this: There is all the difference in the world between saying that the critical moment should arrive round or after such and such a period, and naming that period as "the end" of hostilities. There has been in every military operation which history records a point, not always exactly defined, but lying within fairly narrow limits, after which the end was in sight; but how long the journey would take before that end was actually reached nearly always depends upon factors not in the cognisance of contemporaries. All that I am trying to do in these notes is to gauge the critical moment which, if it is successfully past, will put the end of the war in sight for the Allies, and even in this task I am doing no more than making the roughest of guesses.

So much being said, let us consider this second point of the reserve of men. We have seen that the factor of wastage brings one to a critical point in the early summer—say any time between early May and late June.

Now an examination of the problem from the point of view of man-power converges upon somewhat the same period. I should not be surprised if something of what I here have to say is censored, still less complain at any exercise of that necessary power. But I shall be as discreet as my limited knowledge permits me to be.

Upon the side of the enemy we have three elements to consider—always excluding, as I said last week, the unknown chances of neutrals joining in. These three elements are what Germany has to put forward of trained and equipped men *and when*; what Austria-Hungary, and what Turkey.

Germany is at once the Power which we can best judge in this regard, because her problem has been more thoroughly studied, and, as we shall see in a moment, her two Allies can hardly be judged save upon the analogy of her own position. Moreover, what Germany can do is the important point, for what she cannot do, certainly her Allies cannot.

Well, then, the two things that we have to note about the reserve of German man-power are, first, its total amount, and, secondly, the size of the batches in which it can be successfully put into the field.

As to the first of these, I will simply repeat the estimate which has been so continually put forward in these columns, and which I believe to be amply supported by independent estimates of the highest official character. Germany, over and above the men she trained and equipped for the first efforts of the war—her regular forces—commands a maximum reserve man-power of perhaps more than two millions and certainly less than two millions and a half. We need not return to the arguments stated over and over again in these columns in favour of this number, upon which, as I have said, a weighty agreement exists. There is only one point upon which we need linger, for that is one which has appeared often

in the correspondence columns of this paper, and it is one upon which there is always a good deal of misunderstanding: I mean the proportion of military efficient kept back for civilian employment. It is obvious that great masses of the necessary work, both agricultural and industrial, can be done by men who would not pass the doctor. But that one allows for in making this estimate. The point is that a very considerable amount of absolutely necessary work can only be done by men who certainly would pass the military doctor. That is true of a great deal of railway work, of most mining, of nearly all the heavy work in metals which provides, remember, not only the guns and the ammunition and the shipbuilding, but also the necessary upkeep of very heavily worked railways, and of all the auxiliary machinery without which neither can a great campaign be conducted nor the general life of the nation maintained. It is even true in some degree of agriculture, and if any proof were lacking of a truth so patent, here is an excellent example. If there is one nation which has trained every man available it is the French. Yet the French in the heart of the campaign have been compelled to accord leave in rotation to men at the front for occasional absolutely necessary agricultural work in the interior, and the railway work, though nothing like what has been necessary to the German Empire in this war, has again compelled the French to retain so considerable a proportion of military efficient that even in the small belt of France occupied by the enemy these have appreciably swelled the total of prisoners taken by the Germans; for, as we all know, the totals given by the Germans of their prisoners include many more than the actual soldiers captured.

To leave this point, then, and to return to the German reserve of man-power. Let us call it two million four hundred thousand—a very high estimate. That figure is convenient, both because it weighs the scales against our expectations or hopes, and also because it is divisible into three batches of 800,000, the importance of which figure will be apparent in a moment.

How many of this reserve has Germany already put into the field?

To judge that, let us note that two considerable bodies of newly trained men, whether drafted into existing formations or forming new units, have already been noted, and their numbers roughly estimated in the field. The first batch came in with the late autumn of last year. The last batch have begun to appear with the more recent operations of the late winter—and here let me add that I am revising and somewhat changing here upon later information earlier estimates of my own, which were based upon insufficient data.

We know, again, that the number of men Germany can train at any one time is limited to a certain maximum. Her machinery of instructions, including ground accommodation and instructors, permits her to produce, in successive relays, batches of no more than 800,000.

We need not, unfortunately, modify this much by any consideration of difficulty in equipment, for Germany has been preparing this war for three years, two of which have been

spent in very active preparations, and she made the war at her own moment, when these preparations were complete. We may reasonably presume that she would put the newly trained men into the field as rapidly as she possibly could, for her great advantage is in this very fact, that she alone was prepared, and that, in the long run, time was against her. We may, therefore, reasonably conclude that her first relay exhausted one of these batches; her second relay the second, and that a third only remains. For in two million four hundred thousand you have three groups of 800,000 each. Allowing (in spite of a certain proportion whom we know from prisoners and from letters and diaries found to have been sent forward after a very short training indeed) that the mass of each batch has received full three months' training, and allowing, in order to weight the scales against our expectations and hopes, that not all of the theoretical maximum of any one batch could be dealt with, yet we shall not have much more than a million left, while in all probability the remaining 800,000 of the theoretical calculation are over, rather than under, the mark.

On what kind of date ought we to expect the appearance of these last levies? At the earliest the end of April, at the latest May; or, at the very latest, for that margin which might not be accommodated in the training grounds at once, and could only be put in as the earlier units left for the field, we might admit that the last of the newly trained men would appear in the month of June.

This calculation gives us much the same critical date—the early summer—which we found in discussing the first factor. It is upon an examination of the reserve of man-power, as upon an examination of wastage, the early summer that should provide the critical moment. After that moment the man-power of the enemy cannot be increased or recouped appreciably so far as Germany is concerned.

For Austria-Hungary we have data far less certain. Such vague and general indices as we have got may be put very briefly thus:

As the Dual Monarchy trained and armed originally a smaller proportion of its total population, a larger margin remained theoretically available. On the other hand, the Dual Monarchy had nothing like the organisation for the rapid training of large masses of men in rotation that the German Empire had, and we are putting the figures very high indeed if we allow a reserve yet to appear proportionate to the German reserve, and if we admit a further 600,000 as available for Austria-Hungary at the same date. We must remember that the serious threat under which the Austro-Hungarian dominions, and particularly Hungary, have lain since the invasion of Galicia and the presence of the Russians in the Carpathians, must have already urged the inclusion of all that was available, however imperfectly trained, and it is hardly likely that there remain more than half a million of doubtful material in this field. That may be an under-estimate if the earlier levies were mismanaged. The under-estimate may even be grace. But there is no sign in the efforts this part of the Germanic Alliance has hitherto made of

steady recruitment. There is rather every indication, since the threat to Hungary first became serious last autumn, of great masses of imperfectly trained men having been pushed forward.

Of Turkey, all we can say, knowing the difficulties in equipment, and the totally different social conditions one has to deal with, as well as the hopeless variety in recruitment, is that this branch of the enemy's alliance will hardly put forward in the near future any considerable bodies beyond those already in the field, either so officered or so munitioned as to menace the opposing Powers in any unexpected degree. Turkish territory is already nearly isolated from its Allies; its further and more complete isolation would seem imminent.

We may sum up, and say that the key to the understanding of all this factor is the German recruitment, that this has been studied fairly carefully, and that if a further million can be provided thence by the early summer, we have in that figure the limit.

Against these figures we know that the Allied recruitment is of three kinds. There is the training of the French new class already completed. We have next the new British Armies, and we have lastly the enormous Russian reserve of men, whose presence in the field demands one thing only—equipment.

Now the problem of Russian equipment, which we have touched upon before in connection with the ice-bound ports of that Power, is affected by two efforts now in progress; the first is the forcing of the openings to the Black Sea, the fortune of which is not yet decided. The second is the completion of the broad gauge line to Archangel, on which the Russian news officially passed has just informed us that it is in progress, but how far advanced we are not told. The old avenue of supply from Archangel was not more than many hundred miles of single narrow gauge line, very insufficiently provided with rolling stock. When that insufficient avenue will be supplanted by a full railway, we do not yet know, but, apart from this, with the early summer entry through the ports which are kept open with such difficulty, if at all, during the winter, will begin again, and here, as in other lines of analysis we have examined, though a little later than the date upon which those other lines converge, we find the critical moment corresponding to the opening of the summer season, with a possibility that good fortune at the mouths of the Black Sea may very considerably advance such a moment.

To put the matter in the most general terms possible, it would seem as though by the beginning of May, at the earliest, by the end of June, at the latest, and with increasing force in the interval between, the crisis of the war, so far as reserves of power are concerned, should be reached. In that period something like a balance in men might well be established, and if that period be successfully past, the tide would seem—judged by these necessarily imperfect arguments—to be turning.

There remain to be considered the geographical and the moral factors—the first capable of close scrutiny; the latter liable, of course, to no more than the vaguest judgment—and with these I propose to deal next week.

THE WAR BY WATER.

By FRED T. JANE.

NOTE.—This Article has been submitted to the Press Bureau, which does not object to the publication as censored, and takes no responsibility for the correctness of the statements.

THE DARDANELLES.

THE official details now published of the preliminary operations in the Dardanelles indicate very clearly the immense relative superiority of forts to ships.

The forts were:—

A. Cape Helles	2 9.2
B. Seddul Bahr	6 10.2
C. Orkanieh Tabia	2 9.2
D. Kum Kalossi Tabia	4 10.2

It is improbable that any of these were modern guns, as we know that in the first bombardment of February 19 they were outranged.

The 9.2's are presumably Vickers guns of about fifteen years ago. At and about that time Turkey was buying Vickers guns. The 10.2 is an old Krupp size, and as like as not some of these guns were there when the British Fleet went up the Dardanelles in 1878. The 10.2 would appear to be identical with the 26 centimetre cast-steel breechloader of 22 calibres. There are later 10.2's, "model 1889," of 40 and 50 calibres, with muzzle velocities up to about 2,500; but these would (being on shore mountings) hardly be outranged by the guns of an old battleship like the *Vengeance*.

In any case, however, the forts were not "first class," and in addition thereunto, being Turkish, are most unlikely to have been in any high state of efficiency. Yet they survived the first heavy bombardment, and were only finally reduced after over seven hours' firing from the British ships *Queen Elizabeth*, *Agamemnon*, *Irresistible*, *Vengeance*, *Albion*, and *Cornwallis*, and the French ships *Gaulois*, *Suffren*, and *Charlemagne*—all ships making excellent practice against an indifferent reply.

From this we can get a clear inkling of the magnitude of the task on which the Allied Fleet is engaged, and—unless Turkish resistance suddenly collapses—progress is likely to be slow and tedious.

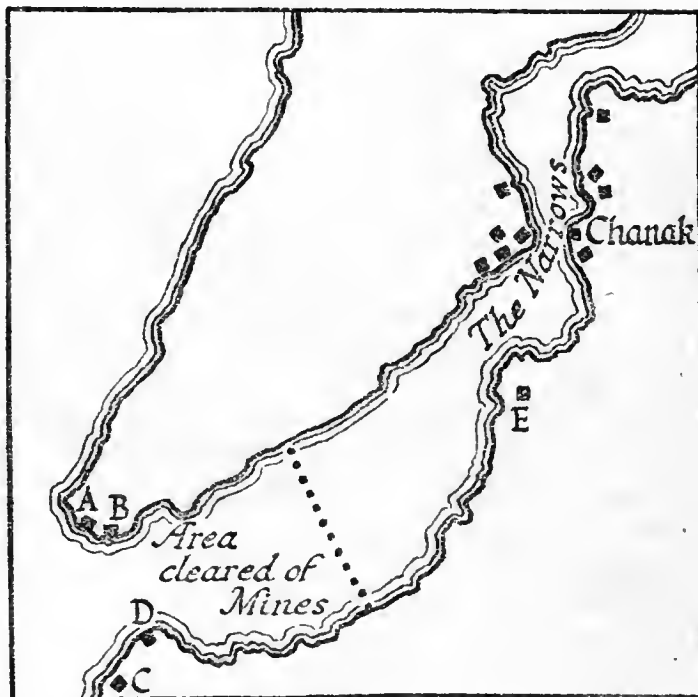
By the 26th four miles had been gained—that is to say, swept clear of mines. In addition, Fort Dardanus (E), mounting four 5.9-inch (probably old Krupp guns), had been more or less silenced by long-range fire from the *Albion*, *Majestic*, and *Vengeance*.

The whole of these operations must, however, be regarded as merely preliminary. Harder work is probably ahead when "The Narrows" come into the zone of operations, and only good luck combined with the most brilliant tactical arrangements are likely to save us from more or less considerable losses.

The public impression that forcing the Dardanelles is a mere parade is very erroneous. The actual task is one of stupendous magnitude, perhaps one of the greatest naval operations ever undertaken. If it is to be paralleled at all we must go back to the fall of Constantinople (Byzantium) to the Turks, and reflect that they will lose it mainly owing to the prevalence of conditions similar to those by which they gained it. However, its slow results will be a useful lesson to those misguided people who are wont to demand why the British Fleet does not bombard Cuxhaven and force the Kiel Canal. Ships v. forts must ever be a very hard task for the ships.

Why our latest Dreadnought, the *Queen Elizabeth*, should have been sent to the Dardanelles to join up with a crowd of old ships is a matter of considerable public conjecture. The probable reason is the most obvious. She is a brand-new ship of an entirely new type just commissioned. Any newly-commissioned ship requires time to "shake down." It is doubtful whether, had she joined the Grand Fleet right off, the *Queen Elizabeth* would have been of much value. In the Dardanelles she can get shaken down and "blooded," and a practical experience obtained as to the exact value of the 15-inch shell which she is hurling into the Turkish fortifications.

A further complication of the attack, and one which will be most acute off Chanak, is that the Turks have abundant facilities for placing floating mines to drift down with the



MAP TO ILLUSTRATE THE POSITIONS IN THE DARDANELLES.

current against the Allied Fleet. Meeting this attack will demand unceasing skill and vigilance.

GENERAL MATTERS.

The Recent Air Raid.

In the issue of February 20 I dealt with the big air raid, and mentioned the dislike of the Air Service to the deification which is apt to befall any of its members who chance to get into the limelight. I was endeavouring to convey that it is inevitable that this should happen with a new arm and the sensational Press, but that the phase will pass. Either I worded myself clumsily, or else some people read things irrespective of the context. In any case, I deeply regret to find that at least one reader is under the impression that I intended to imply that a certain distinguished officer was "on the boom." Nothing was further from my thoughts.

ANSWERS TO CORRESPONDENTS.

H. M. R. (Rugeley).—There is a possibility that a sufficiently sensitive instrument could be constructed, but I should imagine that the motor-boat would see the periscope long before the detector would work.

R. P. (Deal).—Your suggestion would not affect matters except in abnormal cases on account of the depth of water.

W. T. C. (Belfast).—No such appliance is known.

T. F. H. (Birkenhead).—Very many thanks for your letter. The circumstance has already been reported.

H. N. (Ticehurst).—Although experimentally submarines have been detected by aeroplanes, aircraft appear to be of very little use for this purpose under war conditions. This is due to the fact that in peace experiments the submarines would be somewhere at a certain time and also the area of water in which they had to be looked for was small. In war practice, of course, the area of water is very large indeed and the time of the submarine an absolutely indefinite quantity.

W. C. W. (Liskeard).—(1) Discussion on this subject is forbidden. (2) The *Salamis* was expected to be completed at the end of this year. As she was being built by the Vulkan Co. at considerably over the normal German rate of construction it is improbable that they can expedite her. The *Lutzw*, building at Schichau's at Danzig, was down for completion next July, but as her construction could easily be accelerated it is quite possible that she is already very nearly completed for sea. Three battleships of the *Koenig* class were completed shortly after the outbreak of war. The fourth vessel of the class will probably be completed in the course of a

month or so. (3) I am afraid that the stories of the sinking of the *Hertha* and the *Kaiser Wilhelm der Grosse* are versions of one and the same thing, due to vague descriptions, and both of them also may be incorrect stories of the loss of the *Friedrich Karl*, which is the only German ship officially announced to have been lost in the Baltic since the *Magdeburg* was destroyed. (4) Suggestion noted. (5) It is impossible to disintegrate items like those you have quoted from the *Manchurian News*. It is pleasing to hear that they regard it as official that the *Von der Tann* and *Karlsruhe* are sunk, but disquieting that they credit the French Navy with having lost the *Jean Bart* and *Courbet*. This was officially denied by the French Admiralty and officially stated as correct by the Austrians. Possibly the *Manchurian News* was quoting, and not giving any official Russian statement. (6) "Fighting Ships" will be published about May or June as usual.

F. T. (Midhurst).—A pleasant feature of the present war is the way in which everybody seized with an idea spreads it about in the hope of its being useful. You may, however, take it that our destroyers know all there is to know in the matter of hunting submarines. Did you ever see a man with a gun making his first effort to shoot snipe? Our destroyers are (or were) in that position against hostile submarines. The principal danger from submarines is the fact that they are a novel weapon. It is only the non-nautical Germans who imagine that in the submarine they have discovered something which sets all the laws of Nature at defiance. We shall evolve an antidote in due course.

H. R. B. (Checkenham).—All that you suggest has been done for a long time.

R. G. (Bristol).—To foul the propellers of a submarine is excellent in theory, but in practice, unfortunately, it is rather on all fours with catching a bird by putting salt on its tail! The bigness of the sea is the cause of the trouble. Imagine a grasshopper in a ten-acre field seeking to locate and make a meal off some particular insect and you get a not very exaggerated analogy!

S. O'D. (Bramhall).—You may depend upon it that the Naval Air Service has long since utilised aeroplanes for every purpose to which they can be put.

H. M. (Kingstown) and W. D. S. B. S. (Bournemouth).—You have both hit on the same idea independently. It is all right in theory, but in practice would be too slow to be of value, to say nothing of the fact that a torpedo in motion is always a good way ahead of its betraying bubbles. Moreover, the chances of any one particular merchant ship being attacked are very small. The best defence is that adopted by the Admiralty.

T. H. M. (Crosshaven).—Time fuse shells are used against aeroplanes, as well as shrapnel; but any land fire is necessarily haphazard. The correct reply to the aeroplane is the aeroplane. Anti-aircraft guns will no doubt improve: they may very possibly improve so that dirigibles become entirely worthless; but they are never very likely to prove a satisfactory defence against aeroplanes.

F. J. R. (London, E.C.).—(1) Modern submarines have two periscopes, and there is no probability of their being caught from behind. (2) Aircraft have proved of little or no value against submarines. The idea of "harpooning" them was suggested some time ago by Lord Charles Beresford. The trouble is to find the submarine. As remarked some while ago in this column, it is easy to harpoon a whale, because it lacks intelligence enough to make itself scarce when danger threatens. The submarine, on the other hand, is a very intelligent whale.

F. S. (Guernsey).—Many thanks for your enclosure. Least said soonest mended. Your enclosure is conclusive and unpleasant evidence that the German official report of the Tanga affair was not the bluff that I assumed it to have been. All the same, we shall presently have Tanga.

A. W. (Bideford).—The German was probably harmless, or you would not have encountered him in the way you did. A favourite method with the Germans was to put a harmless man to attract attention while the real spy worked unseen behind.

H. S. (No address).—I have forwarded the matter to the proper quarter. Probably they are unaware of what is underneath the sheep's clothing at the place you refer to. Fortunately, if your surmise be correct, there is a proverb which runs: "Every bullet has its billet."

"A Man in the Street."—Your suggestion has been in operation ever since the war started.

H. B. J. (Golder's Green).—Your plan for the destruction of submarines is ingenious, but I am afraid that they are too elusive to be destroyed on the lines you suggest.

C. F. M. (Maida Vale, W.).—Your theory is correct, but you may reckon that our submarine experts thought of it long ago.

R. B. (Birkenhead).—No, I do not consider you "a blithering idiot," but I am afraid that you are amongst the multitude which fails to realise the intrinsic difficulty of getting into touch with a submarine. Once in touch, suitable methods of destruction are simple and plentiful; the real problem is how to find the needle in the bundle of hay.

J. T. H. J. (Cymmer).—There is nothing intrinsically wrong in your idea for combating submarines except that the submarine blockade danger is hardly important enough to warrant such extensive precautions. It is necessary to remember that submarines, like aircraft, are novel weapons of warfare, and consequently get headlines out of all proportion to their actual fighting value.

N. B. M. (London, S.W.).—I am quite ready to concede that German-Americans have their rights, and no doubt from their point of view "Deutschland über alles" interests them more than "The Star Spangled Banner." But as the business of Mr. Winston Churchill is to look after the interests of this country I am afraid that I cannot follow your theory that anything he or the Admiralty may do against Germany is "a low-minded policy." I take it that you are a German-American and honestly entitled to sympathise as you will, but you cannot expect us to sympathise with you. The Germans, of course, are delightful people, but it happens to be the business of this country to kill the enemy, and I am afraid that even if you called Mr. Winston Churchill a d—d nasty brute you would not induce a single British sailor to be unduly softhearted thereby.

"Retaliation."—Your scheme of a trap for German submarines is absolutely perfect in theory. It would certainly work, but do you realise that the chances of any one particular merchant ship being pirated are about one in a thousand, while the cost of what you suggest would be something like one in a hundred—i.e., we should be paying through the nose against imaginary dangers? But when all is said and done there is no certainty in any scheme, and no scheme can safely be based on the theory that the hostile submarine is not very wide awake. I do not believe that there is any such thing as passive defence against Germany's submarine "blockade." Safety only lies in an offensive-defensive by the British Navy.

H. M. (Hampstead, N.W.).—Ideas more or less like your suggestion, though not always so carefully worked out, come to me continually from correspondents. In so far as the scheme is practicable it has long been in operation.

A. W. Y. (Glasgow).—As you say, your idea is not novel, but your proposed application of it most certainly is, and I suggest that you communicate with the Admiralty direct, being careful to explain to them exactly how it works in every way.

W. C. (Wincanton).—(1) At 17,000 yards a shell would have drop enough to fetch up against the protective deck. The curious thing is that it has never been absolutely settled whether a projectile fired at long range with a considerable elevation reaches the target point downward, or point upward as it left the gun. (2) High angle fire to the full extent of 45deg. or more is not possible from warships, because no provision for such extreme elevation is made. It could, of course, be secured by inclining the ship sufficiently. (3) Your idea of training seagulls to detect periscopes by feeding them from periscopes is on the face of it ludicrous. But in actual practice it might very well work in inshore waters. Come to think of it, the idea that the jumping lid of a boiling kettle could revolutionise motive power must also have struck many past sages as ludicrous. By the way, if you look up back numbers of the *Strand Magazine* of about ten years or so ago, you will find that one Angus Sherlock, writing about Naval War Game, detailed a scheme about utilising porpoises for naval purposes. So far as I recollect the *Empire* allowed the claim. The French once seriously considered training eagles to attack aviators, and at the present time I believe that parrots are utilised to give warning of approaching aeroplanes. One way and another, therefore, your idea about seagulls cannot be considered silly, despite the fact that the *Times* paragraph of February 25, to which you refer, merely suggests that the submarine chanced to frighten the seagulls.

E. D. F. (London, S.W.).—Your scheme is very interesting, but I am rather doubtful whether the captive balloon would stay there, also as to whether it would really see very much. As I have so frequently suggested in these columns, the submarine is a very wily fish.

A NOTE OF WARNING.

BRITISH AERIAL SUPREMACY MUST NOT BE COMPROMISED BY AIR RAIDS.

By L. BLIN DESBLEDS.

NOTE.—This article has been submitted to the Press Bureau, which does not object to the publication as censored, and takes no responsibility for the correctness of the statements.

TWO principles seem to have guided our military authorities in dealing with the production of aircraft during the period immediately preceding the outbreak of hostilities. These two principles are:

- (a) Every really promisingly constructed aircraft must be given a trial.
- (b) Every promising constructor must be given work.

As students of military aeronautics are well aware, the adoption of those two principles by our authorities and their adherence to them were not brought about without much pressure from aeronautical designers, constructors, and a certain section of the technical Press. Anyhow, when the war broke out, these two principles being already in operation, the country found itself in possession of several designs of aeroplanes, especially suited for military purposes, and of a number of firms who had already acquired considerable experience in aeronautical construction. When, therefore, in his last article, the writer expressed the view that no praise should be grudged to those who, right at the beginning of hostilities, enabled Great Britain to secure that kind of aerial supremacy for which the various countries were striving, he had in mind not only our splendid airmen and those on the General Staff who were responsible, in all its details, for an intricate and then untried organisation, but also those designers and constructors who, in the early days of aeronautics, have had on many occasions to face with an empty purse official apathy and general indifference. The writers also who, in the public Press, supported and encouraged them deserve as well their meed of recognition.

THE NEED FOR CRITICISM AND SUGGESTIONS.

The writer is led to mention the above facts because there has of late been a tendency, in certain quarters, to point to the exploits of our Flying Corps as evidence that criticism of, and suggestions to, His Majesty's Air Departments are out of place and can serve no purpose. It can be asserted, however, and proved, by means of indisputable documentary and other evidence, that our Air Service owes the efficiency it already possessed when the war broke out to the very sharp criticism to which it had been subjected in the past. As regards outside suggestions, the writer considers that now, more than ever, these should be welcomed:

- (1) Because in studying the new military uses to which, every day, it is found that the aeroplane can be put, our authorities do not possess the accumulated experience which exists in the case of other methods of warfare. They are, therefore, no better prepared to deal with them than any other student of military aeronautics.
- (2) Because an important unforeseen potentiality for offensive purposes has now become evident in the aeroplane, and this potentiality, on account of its possibility of shortening the war, must be developed and employed with as little delay as may be.

To none, therefore, should suggestions be more welcome than to those responsible for the development of our Air Service and for its adaptation to the important task lying before it.

THE TWO KINDS OF AERIAL SUPREMACY

The writer has already, on a former occasion, tried to make clear the point that, speaking in a general manner, the present war has shown that an aerial fleet may be employed in two ways:

- (1) It may form part of our land and sea forces; and
- (2) It may be used as an individual force which may act either independently of or in co-operation with our land and sea forces.

In the following lines it will be explained why, so far as the present war is concerned, the same aerial fleet cannot perform the two preceding functions with the best possible results. When it is considered as a part of our land or sea forces, an air fleet or an air squadron is especially concerned with the reconnaissance or kindred work necessary to the commander of the force to which the air fleet or squadron is

attached. The main value of such a fleet being the carrying out of careful, and at times difficult, observations, it follows that, apart from the reliability and qualities of the aircraft constituting the squadron, the principal factor influencing the efficiency of aerial reconnaissance is the capability of the observer to make and report his observations accurately and carefully. * Both pilot and observer must be able to read and understand a map just as quickly and easily as they can a book, and at any moment of a cross-country flight they should both know exactly where they are. Beyond this the observer—or, in a single-seater, the pilot—must be able to pick up troops on the ground, determine what they are, estimate their numbers, and mark their precise position on the map. He may have to do this in a rough wind and in the midst of fleeting and distracting clouds, and either during his return journey in the air, or after landing from a long and perhaps alarming and uncomfortable flight, he must write a clear, intelligible report of what he has seen. All this is difficult, and, in consequence, the results of aerial reconnaissance will sometimes be inaccurate and misleading.

"This liability to error will be intensified by subterfuges undertaken by the enemy with the express purpose of deceiving the aerial observer. Small forces may be strung out on roads to represent large columns, while the mass of the troops are kept hidden in woods and villages; dummy trenches may be constructed, while real ones are hidden; guns may be made to look like bivouac shelters, bushes, or country carts, while country carts may be made to look like guns. Bivouacs can and have been completely hidden from above, and troops billeted in villages will be hard to locate. The game of deceiving the airman offers endless opportunities for ingenuity, the only drawback being that all these tricks give the troops that carry them out a great deal of trouble and extra work without the satisfaction of ever knowing whether they have been successful. . . . The best guarantee that aerial reconnaissance will overcome the difficulties presented by imperfect observation and hostile subterfuge lies in the careful training and wide experience of its observers, and in the presence of sufficient numbers of aeroplanes to enable doubtful information to be checked and corrected without delay."

Now, since in his last article,† for reasons therein given, the writer has been led to define that "Supremacy of the Air" which we have already acquired as meaning "the capability of airmen to give, in good time, the necessary information which will enable their commanders always to possess the initiative," it follows that, if for some reason, such as the carrying out of a raid or an attack, we deprive even momentarily our land or sea forces of a number of aerial observers of "careful training and wide experience," we compromise, at least for a time, the retention of our aerial supremacy as above defined.

Further, it does not follow that aerial observers of "careful training and wide experience," whose number is limited and whose services are indispensable to the commanders of our land and sea forces, would make the best aerial bombardiers.‡

The writer has, besides, explained on various occasions why aerial attacks should be made in force. Consequently, if an aerial attack be undertaken with an air fleet meant for the maintaining and developing of that supremacy of the air which is at present ours, not only would the personnel of that fleet not be best suited to employ the aeroplane as an offensive weapon, but also by such a policy we would run the risk of compromising the most valuable assistance which the airmen attached to our Army and Navy can render to our land and sea forces.

If, therefore, the country decides to endeavour to

* From a lecture on "The Aeroplane in War," given at the University of London by Major W. S. Brancker, Royal Artillery (R.F.C. Reserve), General Staff.

† "To End the War," LAND AND WATER, February 27, 1915.

‡ See "The Aeroplane on the Offensive," LAND AND WATER, January 23, 1915.

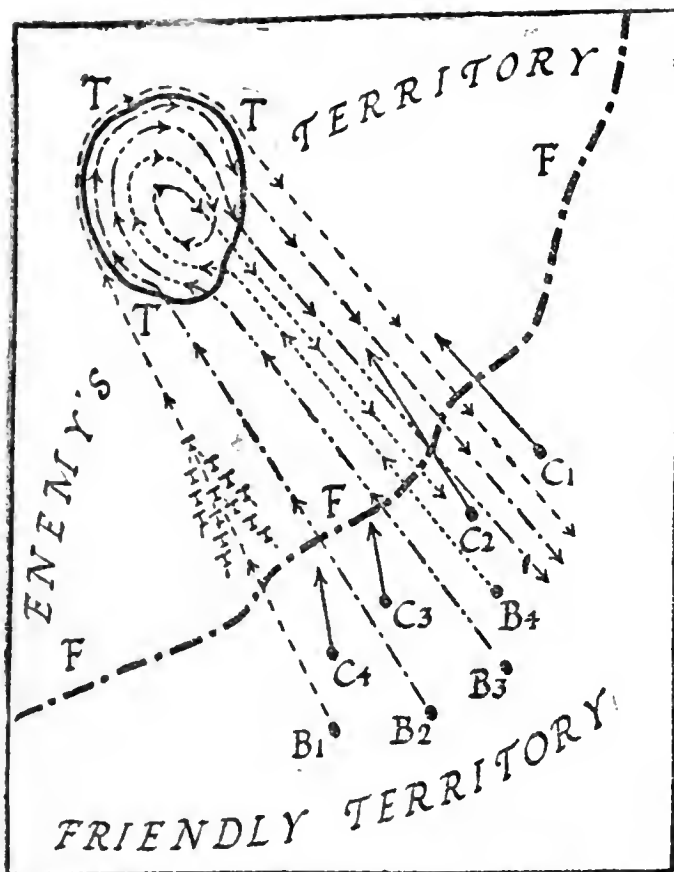


DIAGRAM TO ILLUSTRATE A SUGGESTED METHOD OF AERIAL ATTACK.

obtain an aerial supremacy which would enable us, almost immediately, to carry the war right into the heart of the

enemy's territory, a special offensive air fleet must be created at once.

SUGGESTED METHOD OF AERIAL ATTACK.

In the diagram FFF represents the boundary line between a friendly territory and the enemy's country. This boundary line may be defended by trenches, fortifications, or natural obstacles. TTT represents a portion of the enemy's territory which it may be necessary to attack aerially. Such an attack must be made on a comprehensive and sustained scale. For this purpose it is suggested that the requisite number of aeroplanes should be collected at a certain number of bases, B1, B2, B3, and B4, and C1, C2, C3, and C4, and that, at first, the machines should start only from the bases B1, B2, B3, and B4, at such times as to fly, almost simultaneously, over the ground to be aerially bombarded. The squadron starting from B1 would fly over the outskirts of the territory to be attacked and gradually drop its bombs over the outer circle it would describe. The squadron from B2 would fly over the circumference of a circle inside the one described by the preceding squadron, and fly in the same clockwise direction. Similarly the squadrons from B3 and B4 would describe other inner circles as indicated in the diagram.

This comprehensive aerial attack could be sustained by four other aerial squadrons which would start from bases C1, C2, C3, and C4, immediately the four squadrons from B1, B2, B3, and B4 have returned to the friendly territory, and would fly over the ground to be bombarded in a direction contrariwise to the one adopted by the squadrons from B1, B2, B3, and B4.

In concluding this article, the writer wishes to repeat his note of warning that we should not be tempted to make it a practice to carry out two entirely different kinds of operations—reconnaissance and attack—with the same air fleet.

SHIPS v. FORTS IN THE DARDANELLES

By COLONEL F. N. MAUDE, C.B.

FOR something more than thirty years the whole political question of the Near East has turned upon the matter which is now being put to the test in the Dardanelles by the Allied squadrons of France and England.

It has been partly a naval question, partly one of land defences, and opinions have varied in proportion as the sailors understood the engineers and the engineers understood the sailors.

It has always been an axiom of the German school, trained exclusively on land, that guns in forts could beat guns on a moving platform at sea; but our sailors have as consistently maintained the directly opposite view, while our own engineers, almost equally at home on land or sea, have refused a complete assent to either extreme, pointing out that no hard and fast rule could be drawn, but that each case must be judged by the advantages which a selected site afforded its defenders and the skill with which the engineer and artillerist had applied the means at hand to the attainment of the object in view.

Now it happens that this particular site of the Dardanelles has been made the subject of countless controversies ever since the British Fleet steamed past the Turkish batteries in 1878. We have always known every sounding in the straits and all about the conditions of current and anchorage which governed the application of submarine mines to supplement the gun defence of the forts.

I suppose this particular case is the one instance in history in which both R.E. and R.N. expert opinion has been in entire agreement—i.e., we both accepted the Dardanelles as an indefensible site, as against such ships as the British Navy could always bring to reduce its defence, if the occasion made it worth while to incur a certain amount of risk.

I believe, in fact, that the German engineers held much the same view; but the Turkish forts on the Dardanelles afforded such splendid positions for Messrs. Krupp to dump their monster exhibition cannon, as these passed out of date, that other than intellectual arguments prevailed at Constantinople.

The whole question really turns upon the freedom of ships

to move in fairly deep water and the ease of observation of fire effect from their fighting tops.

In low-lying country, behind sand dunes, for example, it used to be nearly impossible to see where one's shells were falling, even after the site of the battery was located; but in the Dardanelles this facility for escaping observation does not exist, and even if it did the modern aeroplane completely overcomes these difficulties.

Eliminating this one advantage of invisibility possessed by the land battery, the ship now has things all her own way, for she represents a power of concentration of fire under a single control far in excess of anything that has ever been proposed in coast batteries since the days of the old stone batteries of the Crimea.

Of course the number of fighting ships must bear some reasonable proportion to the number of batteries they will engage; but even against a fair superiority of land batteries the modern battleship possesses advantages in practice which the layman seems never to be able to take into account.

It is, of course, the object of the batteries to wing the ships, just as it is that of each ship to hit the batteries; but whereas the battery, or group of batteries, can only predict where a ship will be, say, a minute in advance, and that only on condition that she is clearly visible, the ship always knows half an hour in advance, if need be, what her range to the battery will be, because her speed and helm-angle are entirely under her captain's control, and he can vary either, or both, as he pleases.

Further, thanks to Q.F. guns and the extraordinary power of modern artillery, a ship can from time to time so shroud the fort in a cloud of dust, smoke, and dirt, thrown up by bursting shells, that for some minutes all observation of the ship's course from the fort, or from anywhere near it, becomes impossible, and while the dust so raised is settling she can change her course and reappear at an entirely unknown range for her enemy.

It is clear that there are ways of overcoming this difficulty if it has been thought out and installed in advance; but it is quite certain from the "progress reports" hitherto received that this is a development well beyond any which the Turks have as yet worked out.

CORRESPONDENCE.

THE COST OF A SAILORS' HOME.

To the Editor of LAND AND WATER.

SIR,—You may have noticed that the Scottish National Council of the Y.M.C.A. has been doing really good work at the training camps in Scotland since the beginning of the war.

We have had a very urgent appeal from Invergordon to do something for the Navy men who spend their leisure time ashore there. These men when they get their leave ashore have absolutely no place to spend their time, and certainly no place to spend a night in. We have embarked upon the building of a sailors' home with fifty bed cubicles, restaurant, smoke room, billiard room, and entertainment room accommodation—a place where they can go freely, and always find a warm welcome, comfort, and entertainment.

The appeal from the officers and from the district has been so strong that we have embarked upon the construction of the home without the funds being secured. The total cost, including furnishing, will be £3,600. Towards this we have gathered £900, and have received £500 as a Treasury grant on condition that it is finished in three months' time. We are appealing for the remaining £2,200. The national indebtedness to our sailors goes without saying, and I am sure the need for this sum only wants to be made known to insure its being received. A recommendation to the undoubtedly sympathetic readers of your splendid journal would be of inestimable value in securing the required amount.—Thanking you in anticipation, I am faithfully yours,

ANDREW H. PETTIGREW.

"THE 9TH LANCERS."

To the Editor of LAND AND WATER.

SIR,—With reference to the letter headed "The 9th Lancers," which appeared in LAND AND WATER of February 27, I am able to answer "Old Soldier's" question.

On August 24 the flank of the 5th Infantry Division was threatened by a very heavy attack by the enemy's infantry. The 9th Lancers and part of the 4th Dragoon Guards were ordered to charge with a view to checking the enemy's advance. This they did under a terrific fire, being supported by the remainder of the 4th Dragoon Guards, the 18th Hussars, and L Battery R.H.A. No guns were charged. The mistake made by Mr. H. Ross and other artists is, I think, due to the fact that it was immediately after the charge that Captain Grenfell went to the help of the 119th Battery. This battery had suffered very heavily, and, owing to the heavy fire, was unable to bring up the teams. Captain Grenfell, assisted by officers and men of the 9th Lancers, helped the gunners to man-handle the guns out of action.

I think a good many people have mixed up the two incidents. I enclose my card.—Yours,

X.

"AN AIR FLEET 2,000 STRONG."

To the Editor of LAND AND WATER.

DEAR SIR,—Your plan ought not to fail for the want of capital. Though the Government may not at once vote the money, cannot an appeal be made to the public? In this appeal let patriotism be put before dividends.

I venture to suggest the following points, in sketching the lines of a patriotic limited liability company.

1. The company shall be formed with a capital of £10,000,000, divided into £1 shares, and at allotment preference shall be given to the small subscriber.

2. The maximum dividend shall be 5 (or even 4) per cent., so that the shareholders shall feel that they are helping their country at least as much as their pockets.

3. The employes shall have full trades union rates of pay (and shall further have divided among them 2½ per cent. of the profits over and above the fixed dividends paid to the shareholders).

4. That any further profits that may accrue shall be paid into a sinking fund, which sinking fund shall be used to pay off the shareholders at par, either by annual drawings or as a whole when the sinking fund shall have reached the sum of the capital.

5. That at each drawing and repayment of capital the Government shall step into the place of the former owner of the stock, so that in the end the Government shall own the whole concern.

The general public would, by subscribing for the stock, avoid the necessity of still further inflating the present volume

of Government expenditure; they would not be enriching themselves at the expense of the State by receiving a high rate of interest; and they would, by means of the sinking fund, end by giving their country the present of an organised business undertaking free of cost.

By subscribing the capital, some of us who are not able, by reason of age or health, to serve our country in the field, would feel that we were doing something in the service of the people, and in our small way helping to perform a *λειτουργία*.—I remain, yours very truly,

J. W. WILLIAMS.

Perhaps you will say that this is sentiment, not business; but in war time sentiment has greater power than ever.

New House, Wadhurst,

ANTI-SUBMARINE TACTICS.

To the Editor of LAND AND WATER.

SIR,—In the discussions which have appeared in the newspapers as to the best form of anti-submarine tactics, I have not yet seen a suggestion that a special type of boat should be constructed for the purpose of attacking this new enemy. Destroyers were designed and constructed for the special purpose of attacking torpedo boats. Is it not probable that a new type of vessel will have to be designed for the special purpose of attacking submarines? If this proves to be the case, let us consider the principal points which should be embodied in the design:

(1) She must have speed at least as great as that of the submarine; also she must respond quickly to her rudder and turn in a small circle.

(2) She must be adapted for ramming and constructed in such a manner that she will withstand the shock of collision.

(3) She must carry deck armament somewhat more powerful than that of the largest submarine and also a large scatter gun to use against the periscope.

(4) She should have as low a freeboard as is compatible with a capability of keeping at sea in stormy weather and, if possible, she should have no mast or funnel in order that she may be invisible at a distance.

Possibly some of our torpedo boats could be adapted to fulfil the more important of these conditions, but if not, is there any good reason why the Admiralty should not, without delay, construct a few specially designed anti-submarine boats? Destroyers are too large and too valuable for the purpose, and as for steam yachts, whose maximum speed is twelve or thirteen knots, and which are slow in answering their rudders, I am confident that no yachtsman would consider them at all fit to cope with a fast and active submarine enemy.

If the Admiralty are trusting to armed steam yachts or to unarmed merchant steamers and trawlers for the destruction of the enemy's submarines, I venture to think that they will discover before long that they have made a grave mistake and one which may have serious consequences.

Perhaps I should add that I am writing this letter in the capacity of a yachtsman of forty years' experience and also as an ex-officer of the Royal Engineers.—I remain, Sir, yours faithfully,

DUNLEATH.

THE EAST KENT HUNT.

To the Editor of LAND AND WATER.

DEAR SIR,—The East Kent Hunt has formed a corps of Mounted Scouts.

The Committee consists of Mr. H. W. Selby Lowndes (the M.F.H., who is chairman), Mr. S. L. Harries (hon. sec.), Mr. J. E. Churchill (hon. sec. P. and D.), Mr. J. D. Maxted, and Colonel Baynes, who is in command.

Captain Bell has kindly lent Bourne Park for drilling.

The corps is recognised by the War Office, and already a number of drills have taken place.

Amongst others who have enrolled and attended the mounted drills are Messrs. Selby Lowndes, Harries, Churchill, Uniacke, Collard, Tanner, Miles, Turner, Hunt, Kelsey, Maxted, Coleman, Goodson, Ashenden, Cathie, &c., and it is hoped that hunting men in East Kent who are not eligible for Lord Kitchener's Army will join as soon as possible.

Mr. A. F. Uniacke, of 13, St. George's Street, Canterbury, who is the hon. sec., will furnish all particulars as to conditions, drills, uniform, &c., on application.—Yours faithfully,

H. W. SELBY LOWNDES.

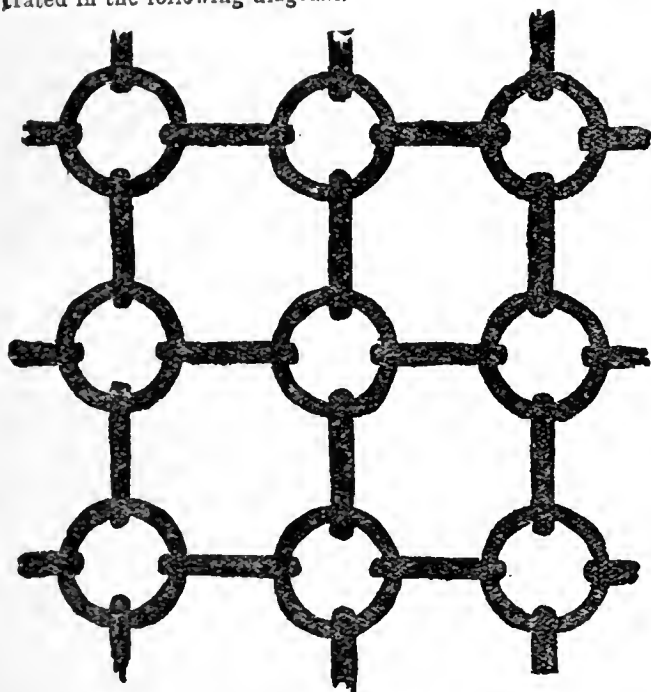
NET DEFENCE.

To the Editor of LAND AND WATER.

SIR,—Permit me to recur to the pressing, yet perplexed, problem of defence against mine and torpedo attack. Many methods of protection will suggest themselves to your readers, which may be classified into two main categories of *Active* and *Passive* defence. Neither should be neglected at the present time.

To deal with "Active" defence first. "Forewarned is forearmed." No owner, or sea-captain, should allow his ship to sail without a full and sufficient equipment of guns, machine-guns, rifles, and, above all, gunners, for dealing faithfully with submarines and other "vermin" of the high seas. Nor should anti-aircraft artillery—in these days of Zeppelins and Taubes—be forgotten; while a pent-house steel net, suspended awning-wise between the masts, should furnish a satisfactory protection against the impact of sky-dropped bombs.

With regard to "Passive" defence, there is, in my judgment, no protection comparable with that of steel-net crinolines, only the old-fashioned system of torpedo net defence has to be reconsidered, extended, and enlarged. The explosive energy of mines and torpedoes is intensely local in its operation, and if the explosion can be kept, say twenty feet, from the sides of the vessel attacked, it will, in most cases, prove to be comparatively innocuous; and every foot of increased distance rapidly reduces its percussive force. I venture, therefore, to suggest that all sea-going vessels should for the present be supplied with a V-shaped framework forward, constructed out of stout pitch-pine baulks, steel joists, or girders. Upon these baulks would be suspended steel nets composed of rings—say six to eight inches in diameter, linked together in vertical, lateral, and horizontal planes, as illustrated in the following diagram.



Take a ship of, say, 300 feet in length (different sizes of vessels would, of course, vary proportionately in their equipment). I calculate that the weight of nets for such a ship, running fore and aft its total length, and having the depth of the vessel's draught, together with cylindrical, cigar-shaped floaters, for carrying the weight of suspension, and linked in flexible connection with stout steel chains (vide accompanying

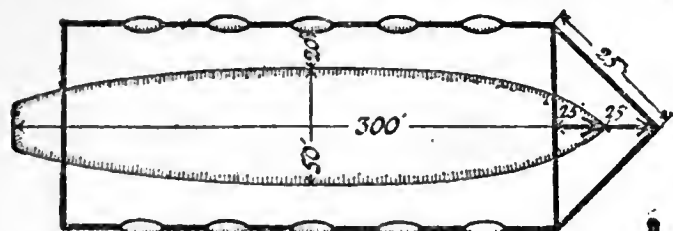


diagram), would not exceed, say, fifteen to twenty tons, the cost of which, according to the complexity of the fittings, might be estimated to be between £300 and £500. These nets would, of course, involve a certain reduction of speed, but the fittings could be easily designed so that the nets and their floaters could be taken aboard at will, when the vessel was steering or sailing outside the zone of probable mine danger or of submarine attack. The loss of speed involved is a serious matter, but not to be taken into account as compared with

the sinking of the ship itself, and the even more irreparable loss of gallant lives.

Thus "actively" and "passively" armed our mercantile marine, no less than our naval fleets, might continue to plough the oceans with supreme indifference to the petty malice of piratical foes, and the terror of "the destruction which walketh in darkness" would swiftly cease to overshadow the spirits of those "who go down to the sea in ships and occupy their business in great waters."—Yours faithfully,

ARNOLD F. HILLS.

"Hammerfield," Penshurst, Kent.

TEUTONIC TRUTH.

To the Editor of LAND AND WATER.

SIR,—As Mr. Hilaire Belloc some time ago justly doubted in your paper the accuracy of the number of prisoners of war officially stated as having been captured by Germany, the following may interest you.

The *Frankfurter Zeitung*, which during this war revealed itself as the most Jingo paper in Germany, and is therefore not to be suspected of playing the German authorities unpleasant tricks, stated on February 25 that Germany and Austria-Hungary held then together 805,000 prisoners of war. Of the 462,000 Russians, 230,000 were in Austria-Hungary. Deducting also 50,000 Serbians held there, altogether 525,000 prisoners were, according to that German paper, in Germany.

When seeing that report I happened to remember that the German Chief Headquarters issued December 31 an official statement, saying: "The total number of prisoners of war interned in Germany, not including civilian prisoners, was, at the end of 1914, 8,138 officers and 577,875 men (total 586,013)." And that official statement added: "These figures do not include a number of those taken in the course of the pursuit in Russian Poland, nor those at present on their way to concentration camps." Yet, leaving those out, you will notice that the German Chief Headquarters mentioned on December 31 not less than 61,000 more prisoners of war than the *Frankfurter Zeitung* reported to be in Germany on February 25!

In order to make it clear to our readers in Holland what reliance can be placed on the German official reports, I took further the trouble to calculate very carefully the number of prisoners of war which, according to the official reports sent by Wolff's Bureau from Berlin to our paper, are supposed to have been captured on both fronts by the Germans between January 1 and February 22. In that time there were reported 118,426 prisoners of war captured by the Germans in East Prussia and Poland and 15,453 on the Western front. Adding these to the number officially reported on December 31, we get a total of 719,892, or 194,892 more than the *Frankfurter Zeitung* reported on February 25.

One other proof of how the "nation of poets and thinkers" is juggling with its numbers of prisoners. According to the *Berliner Tageblatt*, the German Minister at Berne issued to the Swiss newspapers the statement that the number of German war prisoners up to the end of January were: In France, 49,350; in Russia, 2,030; and in England, 7,247; total, 58,627. Now, the official statement issued from the German Chief Headquarters on December 31 contained the following remark: "The Russian statement alleged to have been issued by the Russian Minister of War, that 1,140 German officers and 134,700 men have been captured by the Russians, is incorrect, as the Russian figures include all civilians arrested on and since the outbreak of war. The number of actual prisoners of war is not more than 15 per cent. of these figures." Very well, 15 per cent. of 135,840 gives 20,376 "actual prisoners of war" which official Germany acknowledged to be in Russia at the end of 1914. And the German Minister at Berne has the hardihood to say that four weeks later but 2,030 German prisoners of war were in Russia.

The Teutonic mind appears to be a wonderful thing.—I am, Sir, yours sincerely,

JOHN C. VAN DER VEER

(London Editor of the *Amsterdam Telegraaf*).

49, Minster Road, N.W.

MR. HILAIRE BELLOC'S LECTURES ON THE WAR.

Llandudno.....	Pier Pavilion.....	Saturday.....	6 March, 3 p.m.
Colwyn Bay.....	Pier Pavilion.....	Saturday.....	6 March, 8 p.m.
London.....	Queen's Hall.....	Tuesday.....	9 March, 8.30 p.m.
Winchester.....	Guildhall.....	Wednesday.....	10 March, 3 p.m.
Salisbury.....	Victoria Hall.....	Wednesday.....	10 March, 8.30 p.m.
Bournemouth.....	Pavilion.....	Thursday.....	11 March, 3 p.m.
Weymouth.....	Burdon Rooms.....	Thursday.....	11 March, 8.30 p.m.
Plymouth.....	Guildhall.....	Friday.....	12 March, 3 and 8.30
Exeter.....	Victoria Hall.....	Saturday.....	13 March, 2.30 p.m.

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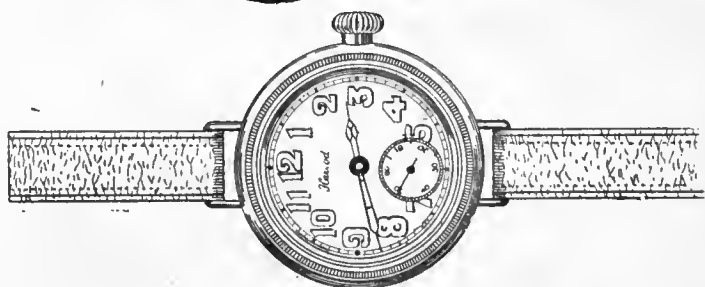


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CHOOSING KIT

Practical Hints

THESE articles are written from practical experience of military matters, with a view to keeping our readers in touch with the various requirements of active service. Changes of climate and the peculiar conditions under which the present campaign is being waged render different items of equipment advisable at different times, and we are in touch with officers at the front and others from whom the actual requirements of officers and men can be ascertained. The articles are not intended to advertise any particular firm or firms.

We shall be pleased to supply information to our readers as to where any of the articles mentioned are obtainable, and we invite correspondence from officers on active service who care to call our attention to any points which would be advantageous in the matter of comforts or equipment, etc., to those who are about to leave for the front.

In the manufacture of articles of kit generally, a good many makers suffer from not knowing the actual requirements of their customers. For instance, there was shown to me a day or two ago a waterproofed and lined vest, which would have been perfectly admirable for a motorist or for any man not called on to undergo any extreme exertion, but for a soldier, whose life alternates between absolute stagnation in the trenches and violent movement in marching and attacking, it was of very little use owing to insufficient ventilation. It was a good thing, but not for campaigning purposes. The same is true of a multitude of articles made for military use; they are good things, but they are made without knowledge of the conditions under which the troops are working, and they are impractical in design.

A New Flask

"All the advantages of silver, at the price of nickel," sums up a new flask which is manufactured in nickel and silver-plated *inside* with a view to the absolute avoidance of corrosion. The flask is, first of all, made in two parts, in the usual oblong shape; these parts are joined to form one unbreakable whole, and *then* the interior plating is done, so that the flask is equivalent to a silver one so far as its interior goes. It is then fitted with a good bayonet top, and there is a flask which is within the reach of any officer as regards price, is neat in appearance (if that is desired), handy in form, and sufficiently stout in manufacture to stand any amount of knocking about without acquiring the dents and creases to which silver is liable, owing to the thinness in which it is made up. Here is a really serviceable article for the officer or man who has not yet got his flask.

Waders

I have recently inspected a new pattern of wader designed for use with the ordinary military boot. It is made of the same thickness of well-waterproofed material from top to toe; it reaches well above the knee, and fastens to the suspender button at the waist. It weighs just over one pound, folds into very small compass, and slips over the ordinary sock inside even a close-fitting boot. It is absolutely waterproof and protects from frost-bite, and it is about the cheapest thing of its kind yet introduced. The average pattern of wader—even if it can be worn with an ordinary boot—necessitates having a size two or three times larger than usual, but one would be surprised at the ease with which this article will go into the ordinary boot—without discomfort to the wearer. There is thus no necessity to carry an extra pair of boots, and as these waders are portable and cheap they are eminently useful for trench work at the present time.

A Chilblain Cure

Some time ago a simple remedy for chilblains was suggested in these columns, and with reference to this a correspondent writes: "Seeing this remedy for chilblains suggested, I wondered if the following excellent remedy would not be more easily obtainable than camphor dissolved in brandy. I myself have cured chilblains with this remedy for years, and although it sounds rather a drastic remedy, it does not hurt in the least. It was given me years ago by an old Irishman who had used it repeatedly and always successfully. The procedure is to dry the chilblains well,

(Continued on page 345)



An Oilskin without the sticky feeling

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LITERATURE FOR THE MONTH

"Culture"

By R. A. SCOTT-JAMES

A FEW volumes of general literature still straggle out from the Press—a few novels, a few volumes of essays and poems, a few works concerned with the older miscellaneous interests of the world. But for the most part the literary horizon is still dominated by the war. There are some books which record actual incidents from the many fields of battle; some which explain the causes of the war, or foretell its effects; some which set out to tell the history of it; whilst others more modestly describe the past wars of English, French, and Germans.

It happens that the two most conspicuous of the books that have been recently published really do, in the important sense of the term, begin at the beginning. They are books which serve to show that we are not merely at war with German armies, or even with the German nation, but with the *mind* through which Germany in her public capacity is and has been thinking. In other words, they enlighten us about the "culture" that has been so much bruited, and reveal it as a culture which was already carrying on war against every other culture in the world. These two books are concerned with Treitschke and Nietzsche, the two German professors who have exercised, directly and indirectly, a profound influence upon the imagination and political thought of modern Germany. It is by a strange irony of circumstance that these two men, so different in character and ideals, should both have contributed to the same end. Nietzsche, as we shall see, would have deprecated the result; he would have poured scorn upon the crude misunderstanding which has made modern Germans actually range themselves under his banner. Once, in a dream, he looked into a mirror, and saw not himself, but "a devil's grinning face, a devil's scornful laugh." That devil's face is the popular misconception of Nietzsche. This distortion of him brings him nearer to Treitschke, and the two men together are represented as apostles of militant Germany; and we shall not fully appreciate what it is that we are fighting against until we understand how those two men have expressed—or have appeared to express—the spirit of modern Germany.

There is no work accessible in English which gives a better all-round account of Treitschke than

"The Political Thought of Heinrich von Treitschke." By H. W. C. Davis, M.A. (Constable.) 6s. net.

The compiler of this book, Mr. Davis, a Fellow of Balliol College, Oxford, has, as far as possible, let Treitschke tell his own story; that is to say, the greater part of the volume consists of extracts from his writings, and for the rest Mr. Davis has outlined the main events in the professor's life, and those movements in German history which influenced and thrilled him. In his earlier writings Treitschke's style seems to have been heavy, involved, unnecessarily obscure. In his later works a kind of animal strength enters into it, and in the "Politik" he is forceful, impassioned, and clear. It is the "Politik" and the essays on English History which matter for us; every reading man should know something about these works. But those who can plough their way through the chapters devoted to his earlier works will see more clearly not only how Treitschke developed, but how Germany, under Prussia, was developing with him.

Treitschke is the master in the school in which Bernhardi is no more than an apt disciple. The gospel of the modern German State is the gospel according to Treitschke. It is not that this learned professor had any extraordinary creative genius or that he diverted his country from the course it was following. He followed the trend of his time, he expressed it, and in later life—from 1874 to 1896—when he was a Professor at Berlin University, he so well stated what was going on in the minds of the younger men that his words "were swallowed as a gospel"; they "expressed the new ambitions of Germany for 'a place in the sun,' for sea-power, for foreign trade, for a colonial empire."

It had taken him many years of professional and political life to arrive at the uncompromising dogmas of his "Politik." He was born in 1834. He was brought up, as he says himself, "in the atmosphere of the Court of Dresden, in circles whose

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one political idea was hatred of Prussia." His whole life was a protest against his early upbringing. The revolutionary movements of 1848 stirred him profoundly. They did not make him a revolutionary, but they helped him at first to be a "Liberal," a believer in popularly elected local governments, and a central executive controlled by a parliamentary system. But German Liberalism in the 'fifties was not opposed to the system of the modern Empire, then non-existent. It was opposed to the petty princes and the narrow-minded governments of the separate states, and Treitschke became the foremost "intellectual," who championed the cause of a united Germany; who asserted that before all else Germany must become one nation, strong, undivided, compact, under an all-powerful centralised government. And he saw that there was only one means of attaining this end. Prussia was already strong. Prussia had behind her a successful military history. He became known as the "apostle of Prussia."

It must be remembered he was a theorist who believed himself to be also an historian, though his range of reading was narrow—and his theory was that of the State. He was influenced most of all by Aristotle's "Politics" and "The Prince" of Machiavelli. The first taught him that the State was an end in itself, to which every citizen owed unfailing obedience and devotion. The second taught him that the State is set above ordinary law and morality; that its success is the paramount consideration; that no ordinary scruples must deter the ruler, whose business is to make the State strong. More and more it was the idea of the State as sheer power which grew upon Treitschke. Prussia was the one embodiment of power which he saw ready at hand. It was Prussia, then, that he welcomed as the saviour of Germany.

By degrees his Liberalism, his belief in Parliamentary systems and the vote, his interest in the average man and the "individual," were swept overboard. He and the young Germans who were growing up around him became infatuated with the idea of a nation which was to be united, unique, pre-eminent, and dominant. The Franco-Prussian War seemed to be only the beginning of a glorious career of ascendancy, which derived especial glory from the fact that it was military.

Happy the generation on whom a stern necessity enjoins a sublime political ideal, a great and simple and universally comprehensible ideal, which forces every other idea of the age into its service! And such an ideal exists among us to-day—the unity of Germany! Whoever fails to serve this ideal is not living the life of his nation. Our life is spent in camp. At any moment an order from the Commander-in-Chief may summon us to arms again. It is not for us to pursue the myriad glittering hopes of freedom which flutter through this age of revolution, to let our eyes be blinded by desire.

He welcomes war because "over and over again has it been proved that it is only in war a people becomes in very deed a people." Warfare is therefore an "important function of the State." "It is to war that all the States we know of owe their existence." "Even among civilised nations war is still the only form of law-suit by which the claims of States can be asserted." War also promotes heroism and manliness, and is the best training school for the manly virtues. And he goes on to show that there is no law beyond itself to which the State can submit. In dealing with uncivilised nations "the necessity of employing intimidation is obvious." And similarly, "there never has been a State, and there never will be a State, which, in concluding a treaty, seriously intended to keep it for ever."

There is no need to point any moral. Treitschke, let it be clearly understood, has stated the theory of government which the German nation accepts. Given that the State is the German State, then Germany can do no wrong. It may be patriotism to break treaties. It may be patriotism to massacre civilians. It is the supreme morality of the German citizen to serve a State which abjures morality. The position has, at least, the merit of being logical. If we read Treitschke at least we may know what it is that we are fighting.

It is worth noting that whilst Treitschke attracted, Nietzsche frightened Germany. The devilry of the doctrine of sheer physical force was not evident when preached by a man who was so well disposed to the acceptable virtues. Treitschke proclaimed the glory of war, but only against the enemies of Germany. But Nietzsche, in effect, proclaimed that Germany *was* the enemy; that the danger lay within. Treitschke exulted in the unique culture which Germany was creating for herself; and he claimed to make smooth the way for the fine practice of religion and the free development of the Christian virtues. Nietzsche denounced German culture, and poured scorn upon the pretensions of her scholars, the sentimentality and hypocrisy of her religionists, and the slavishness of the accepted codes of virtue. In attacking Richard Wagner he was attacking the idol of every

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Pan-German, and offended alike the orthodox in religion and in art.

Indeed, it was only when he was "misunderstood" that from being the object of attack he became in his turn a new idol of the German people. Inevitably, he became much talked about; and the young scholars brought up under the Treitschkean regime began to see points of contact between him and their master. How obvious was the parallel between Nietzsche's super-man and Treitschke's ideal ruler! The one was to be a "free spirit," free from all obligations which he had not imposed upon himself. He was the aristocrat, conscious of his own strength and vision and courage. He was not to be bound by the meaner virtues which slaves had created for their own protection. Gratitude for favours conferred, pity for weaklings, sympathy with degenerates—all of these "moral" qualities Nietzsche, the immoralist, scorned as marks of subjection to habit, indolence, and the survival of slavishness. The philosophy of Nietzsche seemed to young Germany the acceptable philosophy of ruthlessness, egotism, and the right of the strongest.

No doubt Nietzsche was more talked about than read. The best antidote to this misconception of him is to read his works, which have been admirably translated in Dr. Oscar Levy's edition, and also an extraordinarily attractive book recently published:—

"The Lonely Nietzsche." By **Frau Förster Nietzsche.**

Translated by **Paul V. Cohn.** Illustrated. (Heinemann.)

15s. net.

The author is Nietzsche's sister. She does not pretend to share his views or to be especially qualified to expound them. She was a clever woman of much good sense and tact who was always on confidential terms with her brother. This volume opens in the year 1876, and covers all his most important productive period, and brings us down to his death in 1896. There is no irrelevant domestic gossip; no tittle-tattle about a great man. It is a sympathetic biography in which the author describes the conditions under which her brother worked, and lets him speak for himself through scraps of conversation, letters, and his books.

There is nothing in his life to bear out the popular view of him as a morose, irritable man, and a misanthrope. On the contrary, he could enter with all his heart into the deeper and the lighter sides of friendship. His breach with Wagner affected him profoundly and made him ill. In Wagner he thought he had found his "ideal" of a man—his "goal"—and when he discovered his "stagnancy," his "histrionic self-deception," his religious insincerity, he exposed rather than concealed his sense of loss in the words: "Do thou go east, and I will go west." Even when strangers intruded into his periods of solitude they found him courteous. "Nothing," he said, "can compensate me for having forfeited Wagner's sympathy during the last few years. . . . Even now, my whole philosophy is shaken after an hour's sympathetic conversation with some entire stranger."

His "superman" was not a man deprived of the natural affections; his "immoralist" was not a man really relieved from moral obligations. What he denounced was the morality of ease and habit. His own life was one of strenuous labour and sacrifice, a perpetual struggle against ill-health, and the sacrifice of every impulse which did not lead him towards his goal. In his view the "moral" obligations were too paltry to be considered in comparison with the conflict within a man to attain his own God. "If you give rein to all your meaner qualities," he wrote to Fräulein Salome. "who can go on associating with you?" "Heroism involves self-sacrifice and duty—and that daily and hourly." His ideal was that of a "spirit which plays naively; that is to say, spontaneously and from a sense of overflowing abundance of power"—his supermen were "argonauts of the ideal," seeking their "highest expression," and questioning themselves before each action: "Is it such that I want to perform it time and time again?" How different is this "will to power" of Nietzsche from the gross ideal of physical strength which is set up by Treitschke, the "blond beast" which the former feared would be confused with his superman! "My foes have become mighty and have distorted my teaching," he complained. "The coarse grained," as his biographer writes, "have turned the image of the superman into a devil's grinning face."

It is enough now to notice that his sister, in this admirable biography, has shown us Nietzsche more fully, and has proved how distorted is that German interpretation which finds in him the counterpart of Treitschke. "The rulers there (in Germany) are men of heavy, artificial souls. . . . And it was among them that I spent my whole youth!"

In speaking of Nietzsche it is very natural to turn to the English advocate of the superman, and I find ready to my hand two new books. One is

"Bernard Shaw: A Critical Study." By P. P. Howe. (Secker.)

Now, we cannot say of Mr. Shaw that he is a "caricature of his (Nietzsche's) notion of a disciple," for Mr. Shaw would indignantly deny that he is a disciple of Nietzsche or anyone else that has ever lived in the world. But it happens that he has spent about half of his active life in asserting the supermanish idea of the duty of every man to be himself to the utmost, translating the moral and transcendental ideal of Nietzsche on to that everyday, workaday plane which in intellectual matters is supposed to be the sphere of the Englishman. The war, in removing us by a generation or two from everything that preceded it, has put men like Mr. Shaw under the perspective of distance; and though he still remains to us a brilliant dialectical essayist, a stylist with an incisive pen, a satirist with a gift for exposing the foibles and minor hypocrisies of his time, a humanitarian who attempted to be a dramatist, and a witty, likeable historical personage, notable in his day, he seems thin now in comparison with the great men.

But that is no reason why Mr. Howe should treat him as a mere joke and an excuse for fireworks. It is true Mr. Shaw's manner has never lent itself to reverential treatment at the hands of a critic; but Mr. Howe might at least have a little reverence for his own functions as a critic. Regarded as a squib, or as a Fabian Society debating joke, his attack on Mr. Shaw is amusing. But it happens to fill a whole book. He quite truly points out, in sentences which coruscate with Chestertonian railery, that Shaw is, first and foremost, a Fabian advocating "efficiency," that his style aims only at effective assertion, that his dramas are only so many excuses for "talking," that his characters are puppets, that his "laughs" are debating-society retorts, that he is not an artist, and that he has only made "serious drama" funny. But he seems to admit that Mr. Shaw is a moralist, and he should, therefore, as a critic, have examined that part of him in which his excellence lies—his moral principles and beliefs. Mr. Howe acknowledges that he can state a case; he does him less than justice in not explaining that he had also a case to state.

"Killing for Sport." By Various Writers. Edited by H. S. Salt. (Bell.) 2s. 6d. net.

Here Mr. Shaw describes himself "as a critic and as a castigatior of morals by ridicule (otherwise a writer of comedies)." It is characteristic of him that he damages the arguments of the writers who follow him by making light of the injury that is done to the animals "killed for sport," dwelling entirely upon the moral damage that is done to those who kill.

"The Human German." By Edward Edgeworth. (Methuen.) 10s. 6d. net.

If we would study German "culture" on its domestic, social, everyday, average side, we may learn something from Mr. Edgeworth's book. The author suffers from facetiousness, and a slangy, staccato style. The merit of his book lies in the fact that he is writing of what he knows familiarly, and he shows us various types of German—the hapless middle-class official, the maid-servant, the tradesman, the professor, and even the baby. A superficial book, but instructive as a picture of Germans in their homes, in the street, at the theatre, or on holiday. I am inclined to think that it shows us German "culture" on its worst side.

BEFORE THE WAR

"Frederick the Great and Kaiser Joseph: An Episode of War. Diplomacy in the Eighteenth Century." By Harold Temperley. (Duckworth.) 5s. net.

We cannot get to the beginning of the European tangle without considering Frederick the Great, and I wish I had more space to give to Mr. Temperley's masterly account of Frederick's later years and his relations with the Emperor Joseph. The book was written before the war began, and is to a considerable extent based upon a study of unpublished dispatches from Berlin and Vienna in 1776-79. Circumstances have given it a topical interest, for it discusses the consolidation of Prussia and the character of the man whom Wilhelm II. believes to be his *alter ego*. Now we see the

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mantle of the one fallen upon the shoulders of the other. "The question of right (*droit*)," said Frederick, when he was invading Silesia, "is the affair of the ministers," and, later, "the jurisprudence of sovereigns is commonly the right of the stronger." "When one has an advantage," he argued, in the strain of a modern chancellor, "is he to use it or not?" Mr. Temperley describes him as fulfilling Burke's idea of one of the "great bad men of history." But in domestic policy he had the judgment to see that the interests of his people were identical with his own, and he aimed at an impartial administration of justice and religious freedom. As a diplomatist, he understood—as Bismarck understood—that an enemy must be isolated and allies must be found. His successor to-day can more easily imitate his hardness, his opportunism, and his Spartan pose than his diplomatic talent or his administrative genius. Frederick the Great left an "administrative machine"; he could not bequeath his genius.

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The Need for Rest

IT is very hard to realise the necessity for rest in these days. Nearly every woman has her weeks crowded with one engagement after another, for if social doings are more or less in abeyance a vast amount of benevolent work is occupying everybody's time. It is quite easy to work hard for several weeks at a stretch, giving ourselves no repose during the day time of any sort or kind. Then there inevitably comes a time when nervous strain begins to tell, and we become trying not only to ourselves but to everybody else who chances to cross our path. The fact is that it is only now that all are beginning to feel the immense strain that the past few months have been.

There is a kind of tension in the air which reacts upon our nervous systems, little though we feel inclined to acknowledge it; and the result is that nearly everybody is living at infinitely higher pressure. Our very morning papers, awaiting us so harmlessly on the breakfast table, may any day hold the news for us of some tremendous shock. Every postman's knock may herald the tidings of some nerve-racking news. These are destructive days to live in; of that there is no shadow of doubt.

The only thing to be done is for everybody to try to counteract this restless influence as much as possible. It can be done, of course, by mind concentration on matters far removed from war news, but it is not everybody who has either the training or the ability for this. The next best thing is not to over-fatigue the poor willing body. And to this end even the shortest of rests during the day will lead.

Since the war started many people when dressing for dinner have abandoned the evening gown of convention in favour of the rest gown. Rest gowns are, indeed, amongst the best innovations known to the world of dress. They are easy to don and comfortable to wear, besides being infinitely becoming when the work of clever hands. If we can possibly manage to secure half an hour's rest before dinner-time, and only rise to garb ourselves in something reposeful when our dinner is of the informal character that permits it, we shall have gone far towards the prevention of fatigue.

The Shapeless Silhouette

At any other time but this it is safe to state that most women would have talked of the fashions and nothing but the fashions. As it is, the new models are of a sufficiently surprising character to have caused much comment and remark. A girl whose marriage has just figured amongst the many war weddings, and who was married in a simple walking suit, voiced the common opinion about the new skirt very neatly recently. "As I walked up the aisle," she said, "in my short, full skirt I felt like a Dutch girl." And, as a matter of fact, the new skirts have a distinct touch of Dutch style about them. They need to be carefully made because, as it is to the unaccustomed eye, they only just escape verging on the clumsy side.

It is an amazing thing this matter of custom. As each new design is introduced it has always been the fashion for every woman to declare that she thinks the new styles are perfectly hideous. A short while after that we hear no such sweeping opinion, and in a little time again we may meet her any day of the week out-Heroding Herod in her adherence to the latest mode, whatever it may happen to be.

As a nation, it cannot be doubted that we are apt to dislike aught to which we are unaccustomed. This being so,

and granted that we are a race slow to take up new ideas, it is little short of amazing the progress we make when once we do. Once we have thoroughly made up our mind we assimilate an idea with great speed, and in no half-hearted manner. So it is quite likely that in a short while from now every woman will have adopted the shapeless silhouette so definitely decreed. The days of the hour-glass figure have been gone for a long time, but they have never seemed so remote as

now, when shapelessness seems to have been pushed to an almost unkind extreme. The natural figure is completely disguised by the short, full skirts and short, full coats which are falling to our lot, but there is a certain charm about the very impudence of the proceeding, and the *audace* of the thing is undeniable.

One Hundred Miles of Pennies

The organisers of the Queen's "Work for Women" Fund never let the grass grow under their feet. Every scheme that can possibly be suggested for the promotion of the fund is heeded, but it is rarely that such a good money-collecting idea is brought forward as their mileage scheme. Lady Roxburgh and Mrs. C. Arthur Pearson are organising it, and they hope to raise £22,000 in pennies before they finish. The name of the scheme explains itself, but its magnitude can only be grasped after a moment's reflection. It is in very truth a great task that these ladies have undertaken, for it is no less than the collection of a hundred miles of pennies.

A hundred miles of pennies, we hear, heaped in a pile would make quite a mountain of copper. If we imagine

that this great mound had been taken from a long string of houses, each house having a frontage of thirty feet and every householder contributing a penny, we can get a mental picture of the undertaking, for such a line would not only span the circumference of the earth, but leave 5,124 miles to spare.

It is hoped that girls and womenfolk all over the country will help in this mighty collection of copper. Even the poorest amongst us may feel moved to contribute one penny towards the Mileage Scheme, while those richer in possession of this world's goods will probably send many pennies with their contribution. Most people know the headquarters of the Queen's "Work for Women" Fund; but at the risk of repetition it may be said that the address is 33 Portland Place, and that particulars of the work will always be promptly forwarded.

The Potato-Bread Spirit

The news that Germany is making bread out of potatoes has been received in different ways by different people. While some have looked upon it as a sign of grim determination and methodical forethought on Germany's part, others have made it a subject for ridicule. The cheap jester is, unfortunately, always with us, and the war has not brought about his extinction.

One of the points making a recent speech of Mr. Lloyd George's memorable is his apt reference to what he has aptly called "the potato-bread spirit." The Chancellor's opinion is that this spirit should terrify us, not give us cause for mirth, because it is the right spirit for a nation meeting a great emergency. Few will disagree with him. With this question the morale of the whole German nation is concerned. Fortunately for us, there is much to make us confident,

(Continued on page 365)



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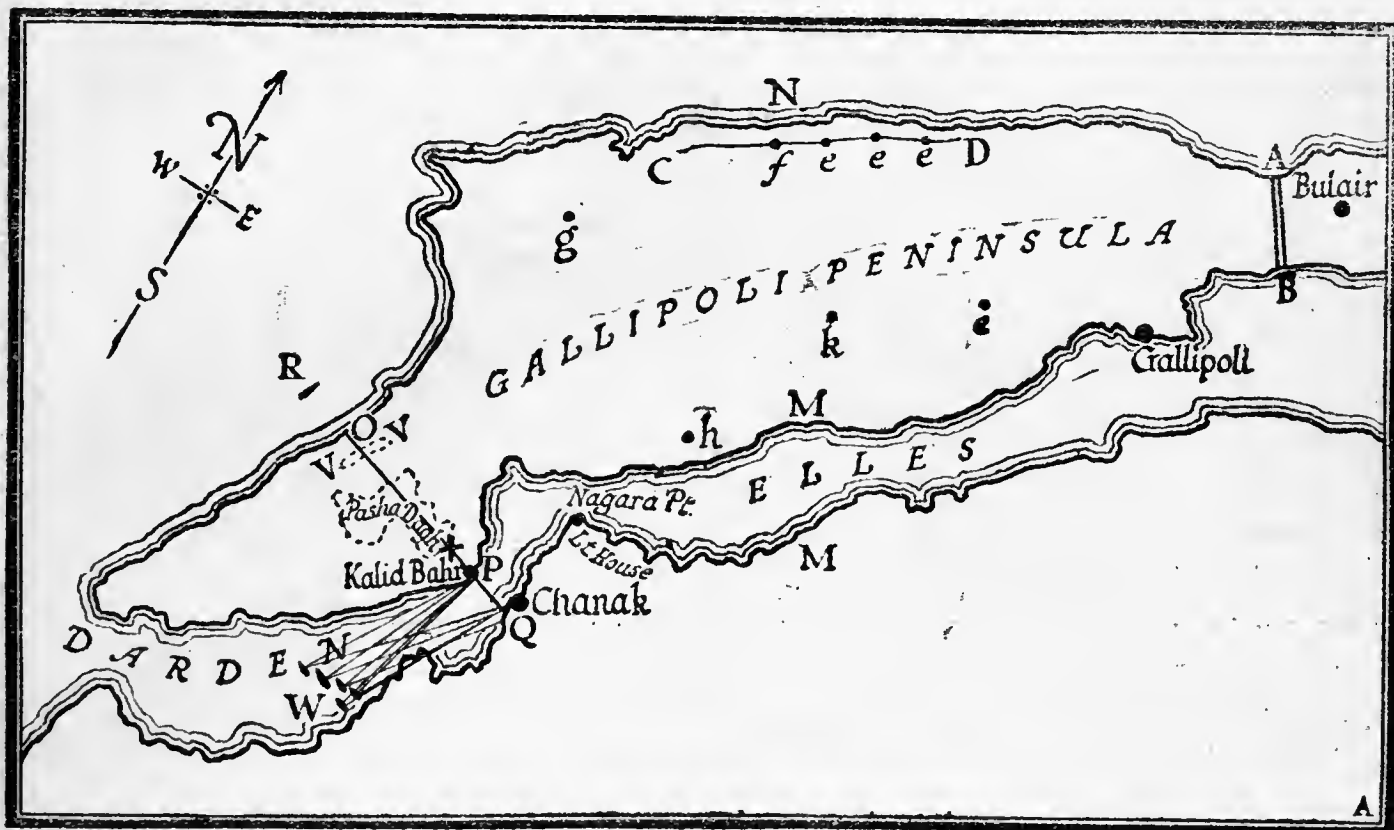
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By HILAIRE BELLOC.

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In accordance with the requirements of the Press Bureau, the positions of troops on Plans illustrating this Article must only be regarded as approximate, and no definite strength at any point is indicated.



THE ATTACK ON THE DARDANELLES.

AS the understanding of the attack upon the Dardanelles involves a little study of the conditions by land, both upon the European and upon the Asiatic side, I may perhaps be excused for attempting some analysis in this part of the paper of what is, in its main features, a naval operation. Whoever designed the method of attack deserves well of Europe, and if, as was probably the case, that man was an Englishman, this country deserves well of Europe, too. For the method of attack is not only one that would have been impossible but for the recent development of naval gunnery, it is also one that shows peculiar originality, and its success, if it is attained, will largely depend upon the power which the latest British men-of-war have to attack the forts in the Narrows of the Strait by indirect fire from the open sea.

The Dardanelles are a passage of salt water thirty miles in length as the crow flies from their entry to their exit, and somewhat more if the slight turnings of its channel be followed. It consists roughly of two parts, one a sort of funnel, reaching from the mouth, which is over four thousand yards across, to the Narrows, between Chanak and Kilidbahr, where there is less than two thousand yards between the Asiatic and the European shores, and these Narrows may be regarded as forming one continuous belt as far north as the lighthouse at Nagara Point. The distance to the Narrows from the mouth is just over twelve sea miles, or rather more than thirteen and a half land miles, and the Narrows themselves,

from their most restricted part opposite Chanak to Nagara Point, are as near as possible three sea miles more; but, as will be seen from the accompanying sketch map, there are in these Narrows but two critical points, that of the passage of Chanak and that of the passage opposite Nagara Point itself, which last is well over two thousand yards. Rather more than twenty miles beyond Nagara Point, opposite the town of Gallipoli, the Straits broaden out into the Sea of Marmora. Upon the European side the Straits are covered by a peninsula of land known as the Gallipoli peninsula. Its conformation determines all these operations.

This peninsula is closed to the north by an isthmus, known as the Isthmus of Bulair, from the town lying immediately beyond it towards the mainland, and across this narrow neck of some three miles from A to B upon the plan have been constructed permanent works with the object of defending the peninsula from attack by land and from the north. Within the peninsula itself are a somewhat confused mass of heights, the higher summits upon which are to be found a range which follows the sea coast along the line C D. The peaks of this range at e e e are not far from a thousand feet. At f the culminating point is reached in a summit of between twelve and thirteen hundred feet.

Of the remaining heights scattered everywhere along that narrow belt of land I have chosen a few, merely as examples; g, for instance, is over eight hundred feet, so is h; k and l are over nine hundred feet, and of such summits (varying

from four hundred feet above the sea to nearly a thousand) there are, perhaps, fifty or sixty, at least, in the confused jumble of these hills.

It will be apparent from this, and from what follows, that if the Narrows, with their heavy fortifications, had stood at some such point as M M, the passage of the Straits would have been very much more difficult, even under modern conditions. No indirect fire could have reached the Asiatic shore from the open sea beyond, for the range would have been one of over twenty-five thousand yards, and only by the greatest good luck and with no precision in firing, however close the bombarding ship had lain inshore, could the European shore even have been touched across the full breadth of the peninsula; while the high range C D, steep on the sea, would have compelled the bombarding ship to stand well out to allow for the trajectory of the shell to pass over heights so near the shore from a thousand to twelve hundred feet above the gun platform. But where the Narrows actually are, the conditions were far more favourable. The line O P, which represents the shortest range to the main works of Kilidbahr from the open sea, is a range of exactly eleven thousand yards, and even O Q, along to the Asiatic shore beyond, is not fourteen thousand. It was possible, therefore, for the latest and most powerful of the British men-of-war to attack both shores by indirect fire.

Indirect fire signifies fire at an object invisible from the firing point and sustained only from calculation and through the directing of the range by a direct observation in the vicinity of the target, which direct observation is conveyed to the firing platform out of sight.

It is clear from this that the reduction of the forts upon the Narrows from a gun platform such as that of a modern man-of-war, lying outside in the open sea, at, say, R, necessitated three developments equally modern and unsuspected when the permanent works of the Dardanelles were designed. First, heavy guns operating with accuracy at a range of over eleven thousand yards (up to over *twenty thousand* yards!) from the vessel; secondly, observation from the air above the target to correct the fire; and, thirdly, wireless telegraphy to convert the results of observation to the gun platform. It is these three quite recent developments in modern military and naval science that have permitted this great experiment.

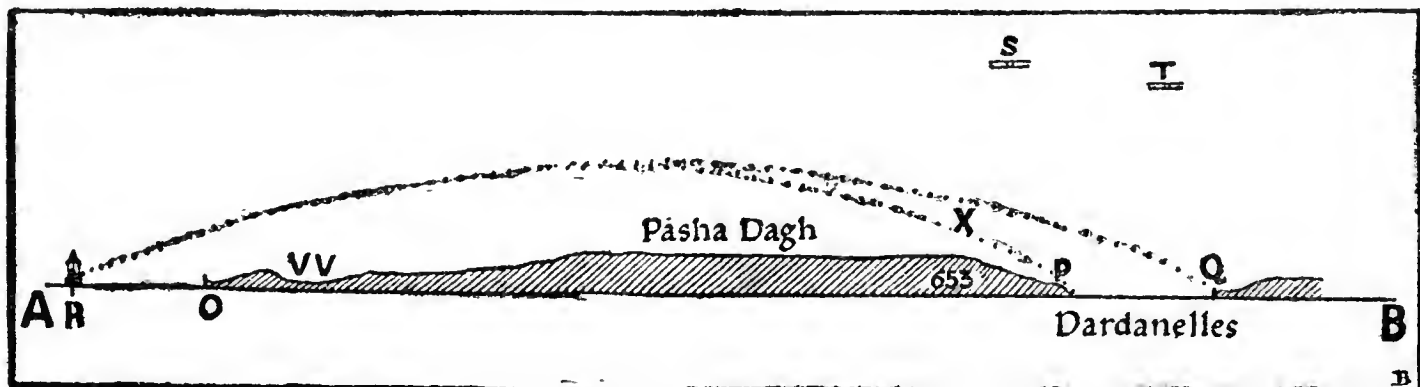
Between O and P—that is, in the strip of land intervening between the Dardanelles and the Narrows and the open sea to the west—there lies a great lump of rather flat-topped hill called the Pasha Dag. Its eastern slopes come down rather steep on to the Dardanelles, but its highest summit, at a point near P, marked by a cross, is only 653 feet. The plateau slopes somewhat, and the slope down from its western edge towards the open sea

is easy, broken only by a small ravine at V V. As a consequence of this disposition of the land, a man-of-war, with guns possessing an accurate range of fire at from eleven to fifteen thousand yards, can make sure of hitting the works at P, and, of course, can make still surer of hitting the works at Q. If we represent the land and sea in section, it will be clear why this is the case.

Drawn to scale, the slope of the Pasha Dag has a comparatively flat summit, and its steep fall on to the Dardanelles may be represented by the sky line of the shaded portion in this diagram, the highest summit at X being no more than 653 feet above the water level A B. Supposing a ship to lie at about the point R, the trajectory of her fire will, roughly, be represented by the dotted line R P and R Q, topping well over the comparatively low-lying land in between, and reaching P in spite of its presence, which is under the steepish eastern slope of the Pasha Dag, and, *a fortiori*, reaching easily the point Q beyond, the observation of the hits and the correction of the fire being made by hydroplanes above P and Q at S and T, which hydroplanes can, by wireless, report the results to the ship at R.

Meanwhile, to support and emphasise the effect of this fire from the largest and newest naval gun platform in the open sea at R, you have a number of ships firing at somewhat shorter range further down the channel at positions round about W, and these ships can also, to some extent, help to correct the fire of R by their observation of the hits as seen from the level. The guns upon the naval platform at R are to most of the larger guns in the forts along the Narrows, roughly, as the cube of 11 is to the cube of 15—that is, they are more than one-third as powerful but much less than one-half as powerful. An 11-inch gun is in power to a 15-inch gun much as 13 is to 33. There seem to have been, over and above the 11-inch guns, which were the normal heaviest armament of the Turkish forts in the Narrows, two 14-inch guns upon the eastern side at Q. These more nearly approached in power the naval guns turned upon them, but they had no opportunity for indirect fire, because they did not know where the naval guns were in the sea outside, nor had they observation from the air (we may presume), nor were they mounted for firing westward, and, beyond all this, they had the difficulties of steep land immediately in front of them, interfering with their high-angle fire.

The permanent works upon the Narrows themselves would seem to be somewhat according to plan C. But, of course, the sketch is only approximate, because no map gives the exact position of a permanent work. It is only obtainable by Secret Service in peace or direct observation in war.





By far the most powerful group of batteries lie upon the slope of the Pasha Dag between the escarpment at B and the water at its foot, and of these, again, it would seem that the most powerful was just outside, and to the south of, the buildings at Kilidbahr, at the point marked 1. It is here,

more between No. 5 and the shore and to the north of No. 5. Altogether, eleven permanent works seem to have been established on this projecting hillside within the limits of little more than a mile. A twelfth was established at Cape Dema, which I have numbered 6 upon the plan.

Upon the opposite, or Asiatic shore, four principal works must be considered. One, just outside the town of Chanak (No. 7), close on the water, was particularly powerful and fast, with two 14-inch guns, and corresponded to its twin work (1) upon the European shore. Half a mile further south Hamidieh, No. 8, defended the Narrows in their southward aspect from the Asiatic side, and it seems to have been upon these two works, 7 and 8, that the greater part of the fire from down the Strait was concentrated.

Supposing these formidable works to be reduced (the works below them towards the Aegean have already been silenced), there still remains, before the whole passage of the Narrows is in the hands of the Allied Fleet, a group of further works on the Asiatic side, strong batteries at 9, 10, 11, right along the shore up to a low elevation on the Nagara Point itself at 14, and a smaller work behind Abydos Point at 15; while on the European side a somewhat less formidable series are to be found, roughly, at the points 16, 17, 300 feet above the water, crowning a very steep slope at 18, and one similarly placed at 400 feet up, at 19, and a similar work at 20. But all these batteries above, or north of the Narrows, would seem to depend ultimately upon the Narrows themselves. If the great group of works between the two lines C D and E F can be reduced, the problem of the Dardanelles is solved, although there remains a lengthy task for the Allied Fleet before the Sea of Marmora is reached.



according to the report, that the first battery was blown up on Thursday. The further batteries in this group stood upon the hillside at 2, 3, and 4, and an especially powerful one, apparently, at 5, facing the northern approach to the Narrows. Between 5 and 3 a group of two minor works stood upon the slope, and four other main batteries lay, the one between 2 and 3, one behind 3, and two

It is worthy of remark that the shores are steep on everywhere, and that there is plenty of water, except in the bight below Chanak, in the shaded portion inside Sari Siglar Bay, where the soundings vary from two to four fathoms, where a five-fathom line comes well out from the shore and a small strip just north of Chanak from Sari Siglar Bay; but neither of these bits of water is

useful or necessary to the bombardment of the works. All that is being undertaken from far down the channel.

There is one aspect of this tremendous piece of work which must not be neglected. The Turkish forces by land are considerable, and though full communication between those upon the Gallipoli peninsula and those upon the mainland to the north is interrupted by the continued shelling to which a portion of the Allied Fleet subjects the peninsula of Bulair, yet there is already a considerable concentration of men, with many field pieces, occupying the peninsula itself. Ultimately these forces will have to be reduced. It can hardly, with the weapons at its disposal, imperil the passage of the Dardanelles by the Fleet when once the permanent works upon that Strait have been reduced. But it can render all land operations difficult when the turn of these shall come, unless a force equal in amount and munitions can be landed somewhere in the north to meet it or to cut it off from the other Turkish forces on the mainland. The concentration upon the Asiatic side cannot be dealt with in the same way. But the possession of the Dardanelles will forbid its junction with the men in the Gallipoli peninsula.

II.

THE NIEMEN-NAREW FRONT.

The efforts of the enemy to pierce the fortified line upon the Niemen and the Narew, and so to reach the Warsaw railway beyond, seem to have come definitely to an end. The issue was in doubt until after the publication of last week's number, but the communiqués on both sides since then show clearly enough what has happened. The force which had crossed the Niemen below Grodno has repassed the river and is retreating through the

Augustowo forest. The force which was defeated at Przasnysz at the other end of the line has fallen back right to the German frontier, and all that remains of the effort is a diminished bombardment of Osowiec in the centre—presumably, in order to prevent the Russians from using the railway that passes through this town for their advance. It was said at the beginning of the movement that its whole meaning was to be tested by the success or failure of the Germans to pass the line of the Narew and Niemen. It would seem at the moment of writing that had failed.

III.

THE CARPATHIAN FRONT.

It was repeatedly insisted upon in these notes, in dealing with the Austro-German action across the Carpathians in the Bukowina, that the main purport of that pressure was political, and that the occupation of Czernowitz meant, above all, the separation of a potential Roumanian army, should Roumania decide to intervene, from the main Russian armies in Galicia round Przemysl and Lemberg. But this opinion I must now modify, for the success of the attack upon the Bukowina and the occupation of Czernowitz was followed up in such a fashion that to the first political object of the move could be added a purely strategic one.

It has been pointed out more than once in these columns that no effort upon the southeastern, or left, flank of the Russian army in Galicia could hope for success unless the Austro-Germans were in possession of the decisive points in the railway system of Southern Galicia, by which they could get supplies across the mountains and concentrate men.

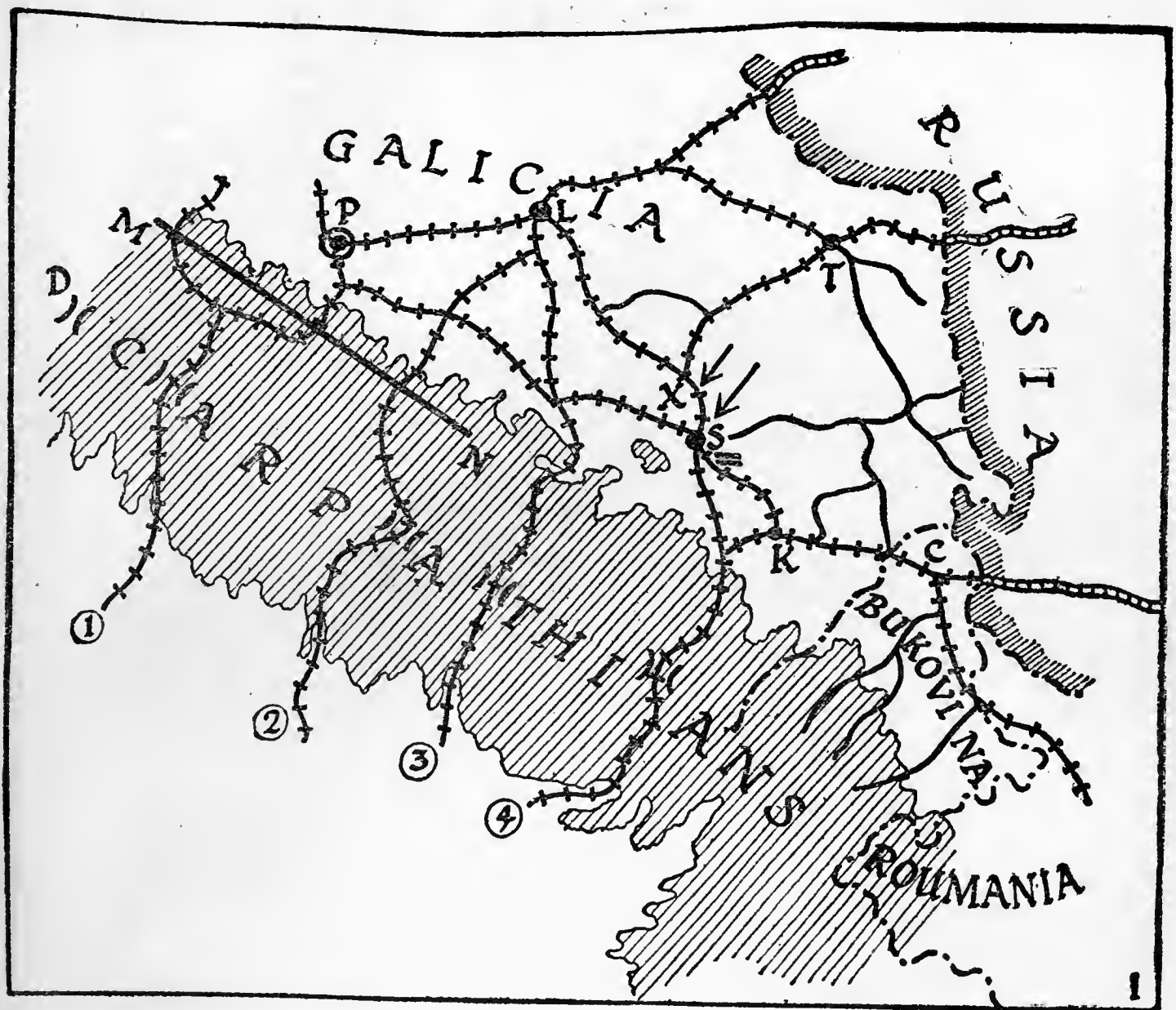
Now, for the few days, as was clear from the note appended to last week's article and put in as a postscript at the last moment, the Austro-Germans nearly succeeded in getting hold of the two decisive points in this railway system, and therefore during those days distinctly menaced the Russian flank. In order to see what happened, the following sketch of the railway system may be of value.

In this sketch the more important lines are marked with cross bars, the three railways which alone approach the complicated Galician system from Russia are marked with double lines cut into segments, the less important railways—those of Galicia and Bukowina—with marked single lines, and the Russian frontier with a hatching.

To hold Czernowitz at C was indeed to cut off the Roumanian system from the Russians, and also from Galicia to the north, but until Kolomea at K was held, no railway transport across the mountains was available to the Austro-Germans for any considerable effort against the southern flank of the Russian armies in Galicia, which had their central base at Lemberg at L, and which are investing Przemysl at P. Even with Kolomea in their hands, the Austro-Germans would be hampered until they obtained the point S, Stanislaus, where four railways meet, and until they were across the line S P, which lies under the foothills of the Carpathians and permits of transport for the munitions that could have come across the mountains by the railway passes 1, 2, 3, and 4. The summits of all these passes are in Austrian hands, the only summit remaining in Russian hands being the road pass at Dukla, D.

Now, the Austrians, as we knew, after a tele-



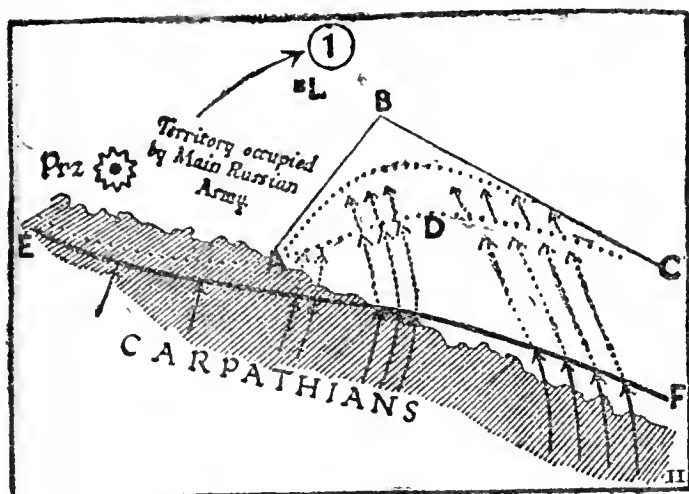


gram which reached London after the last number of this paper was going to press, did get into Kolomea, and, what is more, though we were told nothing about it at the time, they got, what was much more serious, into Stanislaus. A further effort, carrying them to Tarnopol at T, would have turned the Russian positions in Galicia; so much so that it would have involved the Russians retreating from Lemberg and the relief of Przemyśl—in a word, the abandonment of the whole Carpathian front by the Russian armies. I cannot find that we were told that Stanislaus had fallen into Austro-German hands, but this indeed was involved in the mention of an action at the point marked X to the north of Stanislaus, and, roughly speaking, during the four or five days, February 27 to March 3, it would seem as though this railway junction of Stanislaus, and the direct line to Przemyśl which runs from it, was in the hands of the enemy.

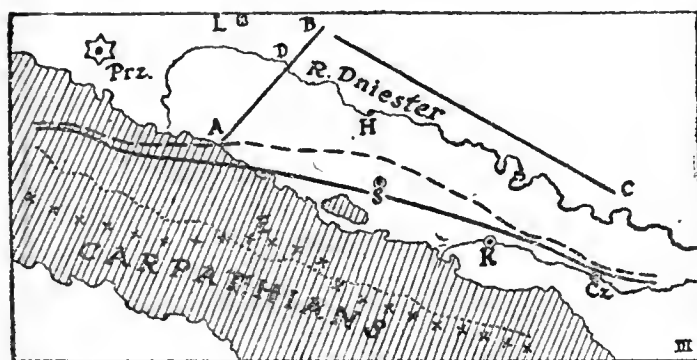
But we now know that an action, offensive upon the Russian side, was successful. Kolomea would seem still to be in Austrian hands. There is therefore still the opportunity for the enemy to provision himself across the mountains by railway line No. 4 and to continue his new effort. Stanislaus, and with it the railway parallel to the range, which is under the mountains from S to P, was retaken by the Russians upon Thursday last, March 4, and if it can be retained by them the point will be of capital importance. For so long as Stanislaus is in Russian hands the single line from No. 4 across the mountains will hardly

provision a sufficient effort from the northward against the flank of the Russian army to Galicia. Very heavy fighting has taken place, roughly along the line M N in the eastern foothills of the range, with the object of relieving Przemyśl, but also with the further object of bringing pressure to bear here, while the flanking movement was in progress to the plain, and with the further object of seizing the railway line S P. According to the Russian accounts all these efforts have so far been brought to a standstill, with very heavy loss to the enemy.

What the Austro-Germans were trying to do in this latter plan can best be described in the following two diagrams, L being Lemberg and P Przemyśl, the invested fortress. Przemyśl the Austro-Germans attacked across the Carpathians in numbers increasing as one went further south along the line, their object being to push the original Russian line at E F back to A B C, and thence back into a rectangular form, such as A B C, which done, they could mass to bring the greatest pressure against A B—that is, against the flank of the territory occupied by the main Russian army. This army was facing south-west, towards E F, with the object of forcing the Carpathians when the moment should permit that operation. A strong attack in flank upon A B would have forbidden it to continue its pressure against the south-west, and, if successful, would have compelled it to retire from Galicia altogether, to raise the siege of Przemyśl, to fall back behind Lemberg, along the arrow (1). If it be



asked how this plan could be sound, leaving the long line B C perpendicular to the line of A B, the answer lies in the disposition of the lower obstacle in that step below the Carpathians, which main obstacle is the river Dneister. It will be apparent from the following sketch that the pushing back of the Russian line more and more eastward will at last succeed in throwing a portion of the Russian forces behind this obstacle, and when that was done, a comparatively small force sufficing to hold it upon that line, the mass



of the Austrian effort could have been turned to the left and north-west against the flank of the Russian armies. In other words, B C would have been immobilised, and A B, and particularly the portion A D, would have been subject to the most pressure. The original Russian line, some six weeks ago, ran along the line of crosses, mostly over the ridge, and only at the point E (at the Beskid passes) falling behind it. The Austro-German effort had the effect after about a month's work of forcing the line back to the full black line parallel to, and in the main beyond, the mountains. Czernowitz at C was occupied; so was Kolomea at K.

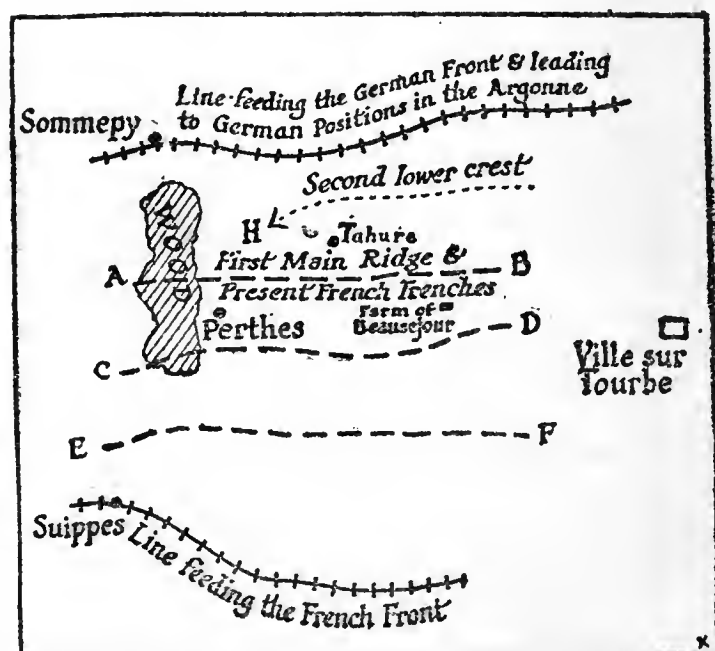
The enemy's thrust thus accomplished the beginning of his final design; for Stanislaus at S was occupied, as we have seen, and the ultimate Russian positions, beyond which they were not forced, were reached in the last days of February—corresponding to the dotted lines behind the full black line upon the sketch. If at the apex of this point, between S and H—that is, upon the right between Stanislaus and Halicz, the effort could have been continued, and if our ally had been compelled to fall back to the river, the whole of the Russian position in Galicia would have been in peril, for it would have been taken in flank. It is not to be wondered at, therefore, after the very heaviest fighting took place at this point, about half-way between S and H—that is, on the main road uniting Stanislaus

with Halicz—and this turned, after a three days' battle, in favour of the Russians. Stanislaus was reoccupied, the thick black line on the sketch roughly re-established, and the plan of forcing the Russian armies behind the Dneister for the moment was defeated. At least, this seems to me to be the explanation of what has been taking place upon the plain below and just north-east of the Carpathians in the last seven days.

IV.

THE EFFORT IN CHAMPAGNE.

Although the ceaseless attacks along the Western front upon one sector after another do not, cannot, and are not intended to break through the line, and have, therefore, no more than a continuous and not a decisive value at this moment (their business is rather to wear down), yet there is one portion of them which has illustrated during the last few weeks the French intention in this kind of war so



thoroughly that it is well worth following in some detail. I refer to the section between the camp of Chalons and the forest of Argonne, the eastern of the two sections to which the open, rolling, chalky district between Rheims and the Argonne is divided.

Many weeks ago, when the French line stood not very far from Suippes, it was pointed out in these columns that the chief effect of a prolonged and successful advance in this district would be to get upon the railway line, which here runs all along behind the German positions and feeds them. This railway line continues through Argonne, and helps to link up the German armies in Champagne with the Crown Prince's army in front of Verdun. At the moment that criticism was written the distance of the French trenches from the railway was, if I remember right, rather more than four miles, and in all the long weeks that have passed since that date no more than a mile of total advance has been gained. The nearest French trenches are still quite three miles from the railway.

The French are in front of Perthes and of the Farm of Beauséjour. But they are a long way from the position of Tahure, for instance. They

have reached a line roughly corresponding to the line A—B (a front of not ten miles) on the above sketch map, having advanced in the course of nearly two months from about the line C—D, and in the course of, say, four months from, roughly, the line E—F. It is clearly apparent, even from so elementary a sketch, that the rate of advance is insignificant, and that although this has been a sector of peculiarly concentrated effort.

What, then, was the object of the French commanders in this sector, as in the others of which this one may be taken as a type? It was here, as everywhere else, *attrition*, and this wearing down of the enemy has been effected here as everywhere else by the two new factors of superior aviation and superior work with heavy guns, coupled, perhaps, with greater and increasing reserves of heavy gun ammunition.

The enemy has nearly preserved his original line, even in this sector. He has fallen back at a rate of less than thirty yards a day on the average. It is self-evident that work of that kind is not, and never was, intended to be the "pushing back" of the enemy out of France. It is the fastest rate obtained on any part of the line, and yet it would take three years of it to go twenty miles and a lifetime to put the enemy back entirely into his own territory, let alone to defeat him.

No; the object in view here, as everywhere, in the West, is usury. Here we have a front, taking in its extremes, of not much more than twelve miles from beyond Souain to beyond Ville sur Tourbe, and on that front the Germans have fought month after month under the increasing disadvantages of superior heavy gun fire and of wholly superior aviation. There have been whole days together during which no German airmen have been seen above the French lines, and it is not, I believe, an unjust estimate that the French have taken three observation flights to their enemy's one in this single sector.

Now, these two things combined, superiority of air-work and superiority of heavy gun work, mean, the first that the enemy has not been able to gauge the weight of attack against him; secondly, that his maintenance of the line has only been possible at a very heavy expense. Both these converge together upon a common effect of constant and heavy loss.

Not knowing quite what he has in front of him, the enemy masses and attacks in mass; losing perpetually out of proportion to his fee he must as perpetually reinforce. It is exactly three weeks, at the moment of writing, since this great effort began in its present form. The order for the new offensive dates from Tuesday, the 16th of February. In that interval there has been sent as reinforcements alone, not counting the troops originally present, some 80,000 to the German front. It is significant that much the greater part of these great numbers has been hurried forward in the last ten days, and that the worst casualties on the enemy's side have occurred in the same period. The *Cologne Gazette* of the Sunday before last gave a conspectus of the fighting and its results. The remainder of the evidence is only drawn

from the statements which the French censorship has passed. We must remember that in this particular case there is special opportunity for information, that direct observation accounts for a good deal, and that the margin of error in the French calculation cannot be great.

It is an estimate drawn up from the same sources which gives one a total German loss since the attack began, excluding prisoners, of certainly over 40,000. That is to say, about a third of the total German effectives put foot on this piece of the front, for there were certainly 40,000 already present before the reinforcements were moved up. It has already been mentioned in a previous issue of this paper, I think, that up to a date now nearly a fortnight past not less than 80,000 rounds of shell had already been delivered in that sector, and it is this fortune in ammunition, coupled with a better handling of the heavy pieces, that has determined so heavy a loss to the enemy.

The advantage will probably be continued. The line A—B on the sketch map above roughly represents a crest from which the land gradually slopes down to Tahure, and then, after a slight swell, falls again on to the railway. This second crest I have marked in a dotted line upon the sketch map. It is considerably lower than the first, and joins round to the first in the direction H.

It is possible, therefore, that after further prolonged efforts the railway itself may be reached and the whole German line be compelled to fall back some appreciable distance—though there is little doubt that by this time a parallel light line will have been built behind the main railway. But even if that success be achieved, the lesson of this front—Souain—Perthes—Beauséjour—Ville sur Tourbe—is not to be discovered in the rate of the advance but in the heaviness of the enemy's perpetual losses.

The particular district in question has advantages over nearly all the rest of the front. It is quite open ground, save for the group of woods west of Perthes; it is light soil which dries quicker than any other part of the whole line, and it is fairly central. It is thoroughly well supplied by the railway in French hands, which runs four or five miles behind and parallel to the French positions, and the soil is favourable to rapid excavation and gives good, dry lodgings when it is tunnelled out. The effect of the advance here is therefore more marked than elsewhere between the Vosges and the sea. But the kind of thing that is going on here is going on everywhere, though usually upon a smaller scale, and the reader will do well to mark this particular section and the news from it in order to judge the nature and the success of the war of attrition in the west.

THE CALCULUS OF THE GERMAN LOSSES

In connection with this matter, one naturally turns to the very high estimate issued by the Press Bureau upon French authority for the total losses of the enemy. That estimate is no less than three million for the German forces alone, counting sick, and, apparently, excluding the lightly wounded who have returned.

To deal with these figures is particularly difficult, because one is in the following dil-

emma: If we go by what we hear from sober observers at the front, who are in a position to co-ordinate all reports and to sift them, we are ready to accept the very highest figures. It is true to say that, in proportion to the actual experiences of our witnesses, to the opportunities they have had of seeing with their own eyes, and of comparing together the multitude of documents presented to the General Staffs upon this subject, are they more inclined to raise their estimate of the enemy's losses. Thus I have myself, in these pages, estimated, from what I was then told, the losses of the enemy in three weeks against the salient of Ypres at over 100,000, and perhaps as much as 120,000. But I have been told by one who was present in all that fighting, and in a position well calculated to judge things reported to him, as well as things that he saw, that this original estimate of mine was far below the mark, and that it could safely be doubled.

We are then, when we base ourselves upon the evidence of eye-witnesses and of those who have the first-hand evidence before them, led towards the higher figures.

But when one takes the experience of former wars and calculates the proportion of sick out of the total casualties on the analogy of the figures on the Allied side, and tests all this by the published official German lists, one is inclined to a much lower estimate—to something not much more than half what the highest figures would present.

The most severe criticism the higher estimate has received actually *halves* the large recent French estimate of three million. This criticism proceeds from the pen of a very competent critic in this country. But to put the total losses at only a million and a half is certainly far too low. It is allowing only 5 per cent. for sickness at any one moment. It is not allowing for the large floating total of slightly wounded (for while the slightly wounded are constantly returning, their ranks are as constantly being supplemented by new casualties at the front), and, above all, it is placing far too much reliance upon the German official figures. It can be affirmed as a piece not of conjecture but of arithmetic that either the proportion of German dead is utterly abnormal, or that the Prussian list is published with more care, and first, the dead, next the severely wounded, next the slightly wounded, and that with all this they are always very

gravely in arrears. We know at a given date the proportion of British dead out of the total casualties. It was more than 11 and less than 14 per cent. We cannot accept for the enemy a proportion of between 20 and 25; or, at least, if we do we must be prepared for very much larger lists of total dead at the end than we have yet been given. This lowest estimate, for instance—arrived at, as I have said, by a very competent critic in this country—allows for a quarter of a million of German dead. It is true to say that there is not an authority on the General Staffs of the Allies who has carefully weighed the figures who would not, at least, add 50 per cent. to that number and be more readily prepared to double it.

It must be remembered before we leave this subject that men perpetually write as though estimates of this kind had for their object either the undue heartening of public opinion or the stiffening of it for a special effort in recruitment or in endurance. In other ways it seems almost to be taken for granted that these estimates must be false one way or the other, on account of the supposed motive with which they are inspired. But there is a third motive, after all, which is much the best, and that is the desire to obtain, even in matters of conjecture, to as great an accuracy as possible. And I think that if we strictly confine ourselves to that motive alone, though we may not admit absence from the field of three million of the Germans, we will probably accept two and a half million, and most of these absent for good.

Take the analogy of our own known and published casualties at a certain date: 25 per cent. of total forces in casualties, and of casualties rather more than half death and serious wounds; death being, say, one-eighth and serious wounds between, say, three-eighths and a half. Remember that those casualties relate to a force which has been successfully passing through violent action and then through periods of lull, while the German forces have been, on one front or the other, perpetually engaged in an hitherto fruitless attack. Admit the Germans have put forward to this date six million—probably more; admit, also, what is certainly the received opinion with the best authority abroad, that their loss from sickness far exceeds ours in proportion. Remember that on the Eastern front the proportion that returned is far less because the ambulance difficulties are there much greater—and you cannot in the end reach a much lower total than that which I have suggested.

THE DURATION OF THE WAR.

III.

CONCLUSION.

IN preceding articles we have seen that the critical point in the great campaign will presumably come, so far as men and munitions are concerned, in the early part of next summer, or, at the earliest, in the late part of the spring.

We have lastly to consider the climatic and the moral factors.

It is again necessary to emphasise what should be an obvious truth, but what the eagerness of our expectations tends to mask from our judgment: that no reasonable conclusion upon the actual length of the campaign can be attempted. It would not only be mere guesswork, but it would be gratuitous folly. All one can do is to estimate the main factors which converge upon what I have called the critical

point—the moment which will presumably be that of greatest strain—a sort of watershed in the history of the struggle, after which the failure or success of what is now an attack upon a besieged district will begin to take clear shape. And even this conjecture upon the critical point in the campaign must be made subject to the reservation that the entry of certain forces now neutral would heavily modify any conclusion now drawn. This being said, let us consider the two remaining factors I have mentioned above.

First, in the matter of topography, we must remember that the forcing of an entrenched line, or the wearing of it down, and the compelling of an enemy to shorten it (which is the problem in the west) is, even supposing superiority in heavy artillery, and in munitions, and in air work, a problem to be stated in terms (among other terms) of soil and of climate. And largely in the same directions must be stated the problem upon the Eastern front, for though it is not there in the main a question of impelling the enemy to shorten his line, or attempting to force a line of trenches, yet the crossing of the Carpathians, quite as much as the possibility of advancing in Northern Poland, is a matter of climate and of soil.

Now it has further to be remarked that one part of an extended line, if it is sufficiently broad, suffices to determine an issue. And we must consider the effect of the weather, of local conditions, of soil, not only over the whole of the two great lines, but especially the favoured portion of them. In the west this portion specially favoured as a rule by climate and always by soil is the Champagne. We have already seen, in another part of these columns, the conditions enjoyed in the district between Rheims and the Argonne, over the flooded land to the north and the hilly land to the south of it for advance. The possibility of such an advance comes earlier in those conditions of soil than elsewhere, and the rainfall is less heavy in the spring than in the fen country to the north or in the hills to the south, but if we asked on what date in the year the conditions become really favourable for action here, though we find it a little earlier than the date which we arrived at in considering the reserves of men and the question of material, yet we do not find it so much earlier as heavily to disturb our calculation. And it is again in the late spring or early summer that the critical moment would seem to come. Though the early summer is, perhaps, too late a date to put for this particular factor, save in exceptional years, the end of April is, roughly, in this part of France, which is already central and Continental in climate, suitable to action upon a large scale. The snow is still melting in the Vosges for a month after all the choking plain to the east and to the north of the hills of the Meuse is clear of wet. The moment differs, of course, from year to year, and I have seen bad conditions of flood in early April in the Marne portion, but in the latter part of the month one is nearly always in full spring.

Upon the Eastern front there is only one sector where the topographical conditions of soil and climate have a real advantage over the

rest, and that is the central watershed of Poland, between the upper waters of the Pilitza and those of the Nida: the higher land which slopes westward away from the hill group round Kielce. It is not a portion of the line to which much attention has been directed until, oddly enough, the last few days. All the heavy work has been done to the north or to the south of this. Were there no such thing as the fortress of Cracow, the same remark would apply to the northern bank of the Upper Vistula and the approach to Silesia, but, Cracow standing as it does, the first sector upon which, so far as climate and conditions of soil are concerned, action on a large scale will be easy, is that which I have here mentioned—the watershed between the Pilitza and the Upper Vistula basins. Unfortunately it is hardly here that any decision could be attempted. It leads nowhere. The passes in the Carpathians do not benefit so early by the change of season, though they are further south. They are not free till nearly a month after the snows have melted round Kielce, and it is the passes in the Carpathians which obviously offer the best strategic opportunity and the greatest political fruits to an advance.

The marshy district which is even now imperilling the German retreat from the Niemen and from the Narew, though far worse in winter than in spring, is never easy going even in the driest of years, and in the open winter which has proved such a handicap to the Russian efforts in this frontier, has only been a handicap, because it has reproduced the conditions of spring. When the snow melts, there is, along that belt of land from Lithuania to Central Poland, a state of affairs in which armies must be almost immobilised, and, in general, action upon this northern part of the Eastern front (so far as climate and local conditions of soils, and apart from other questions of numbers and equipment and munitioning) must be looked for later than in the west. It must also be looked for somewhat later (but not so late as in the north) in the passes of the Carpathians. The earliest portion to get fit, the centre, near Kielce, being unsuitable in situation for the main blow.

But far more important than these very general material considerations are those moral ones which have been but imperfectly understood, perhaps, so far, in the west at least, and which it behoves us to grasp quite clearly. All centre upon the attitude of the Germans. It is the Germans who, by their efforts, will maintain the Austrian alliance: it is the German determination of force which still controls even the doubtful Hungarian position; and the German mood to-day, the chance of its changing to-morrow, are what probably the nations of the West have most difficulty in grasping, and what it is most important for them to grasp.

The foundation of the whole matter is, as has been so often repeated in these columns, the complete confidence of the Germans in the certitude, or, rather, the necessity, of their victory.

Acted upon by the enormous news of the first six weeks, neither one nor the other of these two factors has been measured to its full extent by British opinion.

We can best understand how the German people looked at the chances of the war, remembering what the average Imperialist in this country felt upon the sea power of Britain in, say, the years 1896-1900. Not only was there no question for a moment in the mind of any German that counted, or with the general mass of opinion, as to the invincibility of the German army, but there was what counts more than calculations: there was faith. There was that unquestioning "taking for granted" of certain conditions which seemed to be part of the nature of things.

It is our judgment, of course, partly because the war has been presented to us in a partial manner, but more because as a reflection of our own mood, that the German has long lost his confidence. He has not. If he is losing it at all, he is only beginning to lose it. For in the first weeks of the war came that series of crushing victories of which we only heard in this country doubtful and confused accounts.

There was Metz and there was Tannenberg. There was the avalanche of advance upon Paris. There has been no corresponding sort of defeat. And just as great nations may decline for generations without noting the slow process, so the losing partner to a campaign may greatly fall from a worse position to a worse, hardly noticing his lapse until the first shock of defeat touches him.

The enemy, I make bold to say, will not realise "the critical point" which we have discovered in reserves of men and in material, and to some extent in climate, until the invasion of his soil upon a large scale has begun, or until,

preceding this, he suffers on some one front a serious local defeat, such as the German armies, at least, have not yet suffered.

The number of German prisoners in France is very large. I have been given figures (under reserve), and if those figures are accurate (I do not publish them here) they are much in excess of anything that the most sanguine opinion in this country was ready to accept. But whereas at Maubeuge alone anything from twenty-five to thirty thousand men capitulated and were lost to the French army, whereas in the advance on the Marne the Germans must have picked up many thousands of French wounded, prisoners, and stragglers, whereas in the battle of Metz we know that they captured something like half a division, there is no single action in which the French have taken prisoners great numbers of Germans by one tactical move. The accumulation of their great haul has been the result of an unceasing trickle of surrenders proceeding for months, and even at the battle of the Marne the total of the German prisoners was made up of a number of small units. Further, the wise French policy of not publishing these numbers (wise because it ultimately weakens the enemy by confusing his calculations) yet tends to keep up a fictitious confidence in Germany, and we may make certain that we shall not find in the near future, not in the late spring or early summer, the date to which every other form of argument leads us, a "critical" point in the factor of moral. That point of the factor of German moral will come earlier or later, perhaps even so late as the very eve of collapse, and it will only be determined by the material ravaging of German soil or the dramatic effect of a local disaster on a really considerable scale.

THE WAR BY WATER.

By FRED T. JANE.

NOTE.—This Article has been submitted to the Press Bureau, which does not object to the publication as censored, and takes no responsibility for the correctness of the statements.

THE DARDANELLES.

OPERATIONS in the Dardanelles continue. Fortunately the Turkish guns are mostly obsolete and the garrisons none too efficient or well provided. And so we continue to make "some progress," and shall so continue till there is a sudden "give" and Constantinople once more falls.

But it cannot be too strongly emphasised that "one swallow does not make a summer." We have a certain number of ships which we can spare for these operations, ships which we could lose without jeopardising our naval superiority. This—coupled with the fact that the enemy are not a brainy folk—makes the Dardanelles effort possible. But all the evidence is to the effect that had the Dardanelles been German instead of Turkish no fleet could possibly have done anything whatever, even were the factor of mines and submarines excluded.

The factor of mobility is, of course, a considerable asset to a ship, but against this must be put the relative targets. Allowing heavily for speed and for selection of range, we still get target ratios somewhat as follows:—

* * *

FORT.



SHIP.

The fort guns may, of course, be blinded by dust and debris; but as the forts' position-finders, &c., are not located in the fort, but in any unknown and inconspicuous place

outside it, whereas the ship is self-contained in the same respect, the handicap against the ship is clear.

In the Dardanelles we have so far managed to *outrange* the forts. But given forts of equal range to the ships, we are reduced to realising that, while the ship may hit or may miss, the fort is—humanly speaking—absolutely certain to hit.

Indeed it is only in this strength of the fort that its weakness lies. As every garrison gunner knows, many a fort has guns liable to be outranged because hitting was regarded as so certain that medium calibre guns were considered amply to suffice. Outranging is a modern and novel idea of which the first glimmerings only appeared in the South African War.

It was not invented in that war. The real perceivers of the value of outranging were the Brazilians, who many years before insisted on being supplied with what were then abnormally long guns, on the grounds that they required something which could hit the enemy from a range which he could not reach in return.

The only comment this evoked at the time was confined to sneering speculations about Brazilian "nerves" and what not. To-day, of course, outranging is the last word in the science of war.

Along such lines forts are liable to be reduced; but apart from this nothing has ever happened to negative the old proverb that one gun on shore is worth a dozen such guns afloat. We cannot be too careful in avoiding false deductions from successes in the Dardanelles.

In connection with the Dardanelles operations there is a certain cynical humour about the fact that German naval

experts are advising the Austrians to remember Tegethoff and how off Lissa he attacked and defeated a numerically superior Italian Fleet which was bombarding that island. Between Tegethoff and Lissa there was nothing; between the Austrians and the Dardanelles there is the bulk of the French Navy.

The Austrian Fleet is in exactly the same strategical position as is the German High Sea Fleet. It can stay in harbour or it can come out and accept annihilation.

On March 5 the first step at attacking the Narrows was made. The *Queen Elizabeth* opened a long range bombardment, firing twenty-nine rounds in all, blowing up Hamidieh II Tabia.

The forts operated against were:—

MEDJIDIEH TABIA (J).	NAMAZIEH (T).
2 11-in.	1 11-in.
4 9.4-in.	1 10.2-in.
5 3.4-in.	11 9.4-in.
HAMIDIEH II TABIA (L).	3 8.2-in.
2 14-in.	3 5.9-in.

Of these the guns in J and T are probably old Krupp pieces. The official report speaks of Hamidieh Tabia (L) being armed with the "best and heaviest guns"—but specifies no further.

We are left in doubt as to whether "best" is used in the sense of best guns in possession of the Turks or best guns existing. That is to say, whether Fort L was armed with a couple of 14-in. 36 calibre Krupps of model 1889, and constructed some later date, weighing 90 tons but of no very considerable range, or the modern 14-in., which most gun factors have produced during the last two or three years. Probably the guns were the old 90 ton; unless Krupps managed to do a deal with Turkey over these 14-in. guns which were intended for the German Navy, but never mounted, owing, it is said, to a difficulty in connection with the design for naval mountings.

THE SUBMARINE "BLOCKADE."

So far the "blockade" can hardly be described as successful. I am by no means sure that every merchant ship destroyed has not cost Germany a submarine.

When one comes to think of it, a fair number of submarines have in the past been sunk or damaged by merchant ships which have run into them purely *accidentally*. Now, thanks to the example set by *Syren and Shipping*, not only have our merchant ships been taught that "attack is the best defence," but also they have been taught that there is more or less a price on the head of every pirate and outlaw.

Supposing, of course, that the submarine be sighted, it is more or less even odds whether the threatened merchant ship will not knock out the enemy. To be victimised means either death or probable trouble; to succeed means money; kudos, and the still higher gain of "done my bit." This last is also certainly something of which Von Tirpitz did not think when planning his great "blockade."

It is never wise to prophesy too directly; but it is difficult to get away from the impression that the British Navy and the British Mercantile Marine between them are perfectly capable of dealing with the "blockade," without any necessity of those "retaliatory measures" of which we have, perhaps, already heard too much in Parliament and elsewhere.

GENERAL MATTERS.

ANSWERS TO CORRESPONDENTS.

J. V. M. (Burgess Hill).—(1) Subject is *taboo*. (2) You may be quite satisfied that the *Queen Mary* was not sunk at the battle of the Dogger Bank. (3) Big special guns are rather like the big gooseberry and the sea serpent which we used to hear so much of in more peaceful times. (4) What the Germans may accuse us of does not, I think, amount to much. So far as I can make out, they intended to fall on us suddenly in their own time. We forestalled them, and they make up hymns of hate accordingly. From their point of view I suppose the grievance exists.

A. C. S. S. (Cheltenham).—(1) The fate of the *Von der Tann* is purely a matter of speculation. (2) The *Dresden* is probably in hiding somewhere. (3) The *Kolberg* has not been sunk. (4) We can only speculate as to how many submarines Germany has lost, but it must certainly be far more than she admits even now.

B. P. (Leicester).—(1) A gun of any kind in an aeroplane means so much extra weight which could otherwise be used for carrying petrol or for bombs. (2) The American "Lake" type of submarine carries tubes which can be trained exactly as you suggest.

A. J. W. (Helliwell).—Obstructions such as you suggest would be washed away in next to no time.

E. C. W. (Gayton).—(1) There is great difficulty in classifying the *Queen Elizabeths*. They are too fast to be ordinary battleships; not fast enough to be "battle cruisers." That is how they come to be properly designated as "battleship cruisers." (2) The *Erin* was formerly the Turkish *Rechad V*. The *Broke* and *Falkner* were two Chilean destroyers completing at White's Yard at Cowes.

A. S. G. (Dover).—Your idea is certainly novel, and if not practicable for the sea might have aerial possibilities. You might certainly submit it to the Admiralty. Have the specification neatly typed.

Z. H. L. (Rome).—Theoretically aircraft can detect submarines under water quite easily. In practice the chances of their coinciding sufficiently are something like ten thousand to one against.

"PROTEIN."—I am not a chemist, but I understand that chemical foods are within the region of chemical possibilities, certainly near enough should the necessity be omnipresent. No doubt they would be no nicer than "potato bread," but "needs must when the devil drives." The aeroplane would probably still be a toy had it not been for its war utility and the consequent strenuous development. In the same way a people faced with starvation on account of war would keep on seeking substitutes, chemical or otherwise, for ordinary articles of food.

C. S. (Liverpool).—(1) Submarines have often been down a hundred feet and more, but the exact depth to which one could go would entirely depend on her construction. All submarines can go deeper than any practical purpose necessitates. (2) The depth to which a diver can go depends on his experience and on his heart. Fifteen fathoms is as deep as most fancy going, though the limit is about twenty-five fathoms. But a quarter of an hour is about as long as any man could stand it. You will find much interesting information about divers in the pages of "Whispers from the Fleet," by the late Admiral Sir Christopher Cradock, who lost his life in the Battle of Chile.

W. H. (Cadford St. Mary).—I do not think there is the least danger of German or Austrian submarines managing to interfere with the operations in the Dardanelles.

W. R. J. (Brecon).—Your idea is ingenious. But it, or some variation of it, continually reaches me. Some ideas are more ingenious than others. The cardinal defect of all is the same: "The submarine is too wily a fish to be had with lobster pots." It can so very easily improvise a defence. The best technical brains of the British Navy have been at work on the whole problem for years. Honestly I don't think there can be a non-technical civilian idea which the British Navy has not already long ago considered, and either flung aside as no good or else adopted. Seeing the careful way in which you have worked things out, I do not like replying to you in this seemingly cavalier sort of fashion, but perhaps when I tell you that any number of people write and say: "My idea is to put a mine in the way of a submarine: the authorities, if they approve, can work out details," you will appreciate that the length of this answer puts you into a quite different category.

X. (London, W.).—Leave things to Lord Fisher. You are fully entitled to "think that he is an incompetent ass," but supposing he had the time for it, what do you think he'd think about you? "Democratic rights" may be all right in peace time, but just at present we happen to be at war, and advice (or orders) to the man at the helm from passengers is out of place!

L. D. (Halifax).—Noted. But the German spy fever is being overdone. Some Ministers, remembering the old party political days, may have overdone their talk a bit, but, generally speaking, they have not done badly. We should all of us labour to keep them up to the scratch, but in my opinion criticism *qua* criticism is to be deprecated. When all is said and done we have to sink or swim together.

K. G. (Macclesfield).—From almost prehistoric days there have been enthusiasts who believed that ships could defeat forts; but all the teaching of history is that it can only be done (as in the Dardanelles) by using overwhelming force.

HERBERT STEPHENSON (Liverpool).—(1) It is never possible to arrive at exact particulars, but the bulk of the evidence is that the *Emden* sank the Russian cruiser in Penang under the Japanese flag. "War is war" (as Prince Henry of Prussia said), and in war everyone hits below the belt when the chance occurs. The Russians took things that way. We cannot do better than follow their example. They reckon to return it "in kind" one day. To outrage International Law is silly on that account. (2) I am afraid that the gyrations of Lord Haldane are outside the province of this article. So

far as I can gather, he is a "heaven-born genius" or an "out-and-out traitor," according to the politics of whoever sizes him up. Personally, I have only a literary acquaintance with him; so far as that goes I can put him in neither category. All I can definitely say is that—so far as my experience goes—he was out to do his job according to his lights. Every politician has to do a certain amount of eye-wash. Beyond that he is honest, or he would not be where he is. There is no monopoly of honesty on either side.

A. F. T. (London, W.C.).—Your idea is all right, but you can safely lay sixty to one that the British Navy tumbled to it six months ago.

F. G. (London, N.).—Fifty people at least have sent in the same idea before. See replies to several. It is something like a million to one whether any non-technical idea sent in is worth the paper that it is written on. At the same time, it is worth a lot against Germany. Your idea is not, but the spirit which prompts you to send the idea along is quite as potent as if you were a man (or two men) in the trenches. I take off my hat to any lady who tries to do her bit, no matter how ridiculous that bit may be. As a matter of fact, your particular idea is not in the least ridiculous, but experiments long ago proved it to be impracticable.

A. E. (Cardiff).—Your idea is quite sound. The only thing against it is that it has been in operation ever since the war began. Not quite as you put it, perhaps, but the same integral idea. The British Navy is no fool, and there is little that it has not thought of long since.

B. C. (London, N.).—See the last three replies.

M. F. (Quinta, St. John, Madeira).—(1) Yes. You are right. I have acknowledged the silly pen-slip about the *York*. (2) *Re the Queen Elizabeth*, see answer to "E. C. W.," above.

"ALPHABET" (Cardiff).—Duly noted. There have been German spies galore; but a certain amount of perspective should be observed. Think of the number of our people who have harmlessly been to Wiesbaden, Baden-Baden, &c. It is easy to overdo the spy business and to help the enemy accordingly.

N. B. M. (London, S.W.).—I am glad to learn that you are not a German-American. Three weeks ago I suggested that attempting to starve the civil population was probably a mistake. Apparently you and I are arguing to the same effect from different standpoints. Where I think you get adrift is as follows: You do not seem to realise that Mr.

Churchill is a Democratic Minister compelled to minister to a democracy—and you know what Mr. Bumble (vide "Oliver Twist") said about "the public." Consequently Mr. Churchill has to consider his audience as well as his job. I will allow that he has let off "hot air" on more than one occasion. I will further admit that there are few abusive adjectives which I did not apply to him in the piping times of peace, but—we are at present at war, and it is due to him that we are where we are. *Palam qui meruit ferat!*

W. H. M. G. (Eastry).—Yes. Some of the ideas about nets and torpedoes are assorted and peculiar! As for the Zeppelin basket, that really does exist. It was originally designed to carry a machine gun, but now I believe is used for bomb-dropping, being let down when the machine is more or less stationary. Not impossible it is stayed to prevent being "dragged" when in motion. Otherwise, of course—exactly as you suggest—it would be dragged to goodness knows where.

W. H. G. T. (Toronto, Canada).—Many thanks for the cutting you enclose of the American "expert's" views. I have no means of ascertaining the naval qualifications of Mr. Benjamin, "naval expert," but I certainly agree with you that his opinion that Admiral Beatty should be shot for not having plunged into a clever German trap suggests that Mr. Benjamin's sympathies do not lie with the British Navy. Put your trust in Admiral Beatty, and let the Germans say what they like.

"VERIEST TYRO" (Dunmore).—At Heligoland, so far as we know, the Germans have concreted everything. We could probably ease off torpedoes without number and leave the bases of the fortifications untouched. When our really big guns come along it is not impossible that we may gradually disintegrate the island, but I am afraid that it is exceedingly improbable. Destroying a fort is something like trying to kill a tortoise which you cannot capsize.

"AIR BUG" (Dundee).—I think that the *Army and Navy Gazette* hit the right nail on the head. All these "air mechanics" know a great deal about the technique, but where war strategy is concerned they are apt to be babies in arms. They can never realise that *the enemy will not be idle in the meantime*. Our Army would have been in Berlin by now if German guns and German rifles had not been in the way.

"ENCORE RETALIATION."—Sorry I misunderstood you. What you now explain as the idea suggested has been in operation ever since the war began.

GREAT BRITAIN'S AERIAL POSITION.

By L. BLIN DESBLEDS.

DURING six consecutive weeks the writer has, in these columns, endeavoured to draw the serious attention of the authorities to the great value of the aeroplane for offensive purposes, and in one of his articles he suggested the creation of a special air fleet 2,000 strong. In studying the potential capabilities of the fifth arm he has been led to certain conclusions, which were explained in his articles, and some of which it may now be useful to repeat. He therefore asks those who may be concerned with the adaptation of the new weapon of war for offensive purposes to bear in mind the following vital points:

(1) An air fleet may be used for two distinct purposes:

(a) It may form part of a land or sea force, when its rôle must necessarily be limited to the operations of that force considered as a whole. It is as a part of a land or a sea force that, generally speaking, the belligerents, whether allied or opposed to us, have, up to the present, employed their aircraft. In such employment of their aeroplanes the British have obtained so great an ascendancy over their adversaries that they now claim to possess the "Supremacy of the Air." This term should, in reality, convey no other fact than that our airmen can carry out more comprehensive and more detailed and reliable observations than those of the enemy.

(b) It may be looked upon as a force of offensive and destructive value, to be employed either independently of, or in co-operation with, a land or a sea force. With the exception of a few raids, which can only be regarded as very timid aerial attacks, the employment of aircraft for offensive and destructive purposes has not yet become an accomplished fact.

(2) From considerations based upon the carrying capacity of existing aircraft and upon the lack of precise knowledge of aerial ballistics, as well as upon various general data, an offensive air fleet must be strong in number.

(3) The same air fleet should not at one time be used to form part of a land or a sea force, and at another time to act as an independent force. The plan of detaching from an air fleet forming

part of a land or a sea force a number of machines to carry out an offensive operation, such as a raid, which can only lead to local and temporary advantages, has, since the opening of hostilities, been adopted both by the Allies and by the enemy. This, although it may not have led to permanent results, has been useful. It has proved in actual practice the potential value of the offensive aeroplane, and has established the importance of the number of aircraft in a fleet carrying out offensive operations. But it is an action which must not be too frequently repeated, as such a course may compromise the aerial supremacy which is already ours and yet have no real influence on the war.

(4) A powerful offensive air fleet specially built to act either independently of or in co-operation with a land or a sea force should be created at once. That force could permanently influence both the character and the duration of the present war.

BRITAIN'S UNIQUE POSITION.

In considering the capability of the British Isles to produce in a short time a very large number of aeroplanes, one cannot fail to realise that a great part of the resources of the country which could be employed in the production of an offensive air fleet are still unutilised. In his last article* the writer referred to the two principles which seem to have guided our military authorities in the production of aircraft during the period immediately preceding the outbreak of hostilities. These two principles—(a) every promising constructed aircraft must be given a trial, and (b) every promising constructor must be given work—were also, in a greater or less degree, those which guided the foreign countries. To these two principles is due the fact that at the beginning of the war all the principal belligerent countries possessed several successful designs of aircraft and a number of firms who had acquired experience in aircraft construction. But now, owing to her voluntary system of military service and to her command of

* "A Note of Warning," LAND AND WATER, March 6, 1915.

the seas, the capability of Great Britain to construct aircraft on a large scale is unique.

Of all the nations now at war, Great Britain, by reason of her system of voluntary military service, has had her industries the least disturbed, and on account of the supremacy of her Navy she is not short of any material that may be required in the construction of war weapons. Hence these two causes have given to the country the means of supplying her armies with more and better aircraft than is possible to the enemy. The full significance of these two causes of the aerial supremacy which is at present ours—(a) an undisturbed industry; (b) the naval supremacy—will be readily understood when it is remembered that the aeroplane constructor depends for the carrying out of his work upon a great number of industries which, in their turn, depend upon an adequate supply of the necessary materials. Confronted by a disorganised industry, an aeroplane constructor, however talented and however experienced, could not easily produce a single machine. To give the reader an idea of the various industries on which the aeroplane constructor depends for the construction of an aeroplane, some of them will be mentioned. The motor industry must supply him with a light and reliable motor; the propeller maker with a suitable propeller. The wings of the machine must be covered with a strong and light linen fabric, which must be supplied by the linen industry. This linen fabric itself must be treated with a "dope," the manufacture of which depends on the chemical industry. The wheels of the machine are provided by the cycle maker, and their covers and inner tubes by the rubber industry, and the production of hundreds of other small but important parts, such as turn-buckles, different flanges and connections, tee-pieces, various taps, valves, nuts, nipples, petrol fillers, fuel and oil tanks, pulleys, bracket seats, chassis springs, and many other parts, the mere mention of which would require some several hundred words, depend upon a large number of miscellaneous engineering industries. It is thus clear that with her industries disorganised and deprived of the necessary material, comprising wood, rubber, steel, copper, aluminium, fibre for linen, petrol, lubricating oil, and other substances, it is very difficult, if not impossible, for a country to try to create during the war an air fleet capable of offensive operations of permanent value.

In her ability to produce aircraft Britain stands alone.

France, on account of her compulsory system of military service which called to the colours thousands of men who suddenly had to leave her industries short of labour and organising power, does not now possess the tithe of our resources for aircraft construction. The occupation by the Germans of the highly industrial districts of Northern France still further reduced the industrial resources of our Ally. It is for this reason that France, who, under more fortunate circumstances, would probably have created a grand offensive air fleet, now finds herself incapable of even attempting the effort. It is upon us that the burden rests of creating such a fleet. It is a duty which we are bound to perform, since it may, without interfering with our other arrangements, lead to a much shorter war and to a smaller sacrifice of lives.

THE BUILDING OF 2,000 AEROPLANES.

Aeroplanes can now be built much quicker than at the beginning of hostilities, both because fewer types of machines are constructed and because greater practice in the construction, on a larger scale, of the various parts required has been obtained. The rate of construction can be further increased, and in creating an offensive air fleet 2,000 strong, the writer suggests the adoption of only one type of machine. This type, which would be the standard type for the offensive independent fleet, should be built outside the regular aeronautical industry, which is already fully employed in producing the necessary machines for our present aerial fleet, which, on account of its various duties, must necessarily contain units of various standards. The offensive air fleet, being brought into existence for one single definite purpose, would consist of only one type. The creation of such a fleet would not prevent the development of aeronautics, would not interfere with the established aeronautical industry, and would employ numerous, and as yet untapped, engineering and other resources of the country which are now unutilised and are lying fallow. The writer makes this comment advisedly. During the last few weeks he has been in touch with scores of industrial firms all over the country where work is slack through want of orders, and who are desirous, and capable, of supplying all the various necessary parts for the creation, within six months, of an offensive air fleet on the scale indicated. The list of these firms the writer is prepared to communicate to the authorities should it be required.

THE ASCENDENCY OF THE ALLIED AIRCRAFT.

WHAT IT MEANS IN THE COMING ADVANCE.

By COLONEL F. N. MAUDE, C.B.

WHILE everyone is wondering when the Great Advance from France and Flanders to the Rhine will begin, no one seems to have noticed the growth of a new factor in the conduct of warfare, which, working quite silently, has completely changed the nature of the vast problem before the Allies.

It began to make its appearance some six months ago, when Sir John French in his dispatches wrote of our superiority which was evinced by our airmen as compared to those of the Germans.

But, even then, scarcely anyone began to speculate seriously on what might follow this ascendancy, because no one could have believed that by degrees such a power would in so short a time be so firmly established as to render the German air fleet for all practical purposes as non-existent as the ships in the Kiel Canal. But, reading between the lines of the French communiqués, it was possible to see what was coming when day after day artillery duels were decided with the vantage to the gunners of the Allies.

If we look back to the dates when this remark first appeared with regularity, it will be evident that at that time there could be no question of our numerical superiority in guns, or even in ammunition supply, to account for the fact, and as between the actual skill of the gun-layers the advantage could only be trifling.

The factor which remains as explanation of the phrasing of the reports was "facility" or "superiority of observation," and it was in the domain of the flying men that we could look for this facility, as all other methods were the common property of both sides.

Week after week, as the communiqués told of enemy guns smashed up by direct hits, of batteries silenced, and

whole lengths of trenches blown in, it became more especially evident that our ascendancy was increasing, and when at last began the series of French local attacks on a considerable scale, in Alsace, then near Soissons, and since in almost every sector of defence in turn, there could be no doubt that we had firmly established it.

In each case these offensives were seen to compel the Germans to bring up reinforcements to avert the danger threatening some vital point, generally one of the lateral railways, on which the cohesion of the fighting front depends.

As Mr. Hilaire Belloc has so well shown in these pages, the Germans were very hard put to it indeed to find reinforcements for the threatened sectors. At Soissons, thanks to the local superiority of numbers which they were able to accumulate and to the rise of the Aisne, they could claim an advantage which loomed very large through the turgid language of their announcements. But this did not by any means suffice to put the observers of the game off the true line. The recent operations between Perthés and Souain, to mention only the principal group, have confirmed the impression which has been forming in my mind for some time—viz., that the French have now attained so entire a mastery over enemy movements that they can oblige him to come out into the open and attack them when and wherever they please. This is the meaning of the announcement they made officially last week that "at a given point and at a given hour we are free to do what we will."

I believe the claim to be thoroughly justified by the circumstances, and its importance it is difficult to over-estimate.

In every battle, siege, or campaign the chief object of the commander on one side has always been to compel his adversary to use up his reserves prematurely at some point

chosen for him to waste them, not selected by him of his own volition.

Though Napoleon generally succeeded, in his latter campaigns, in so completely dominating his enemy's will as to realise this ideal, he never established such a degree of ascendancy as this quotation from the French report confirms.

Indeed, it was an inconceivable proposition for any leader to arrive at until the coming of the aeroplane, as handled by the Allied airmen, created the possibility. And the assertion of this power in a communication meant to be circulated to the enemy has been made intentionally to establish a moral superiority over the enemy commanders. Moreover, it shows a very nice appreciation of the psychology of the German nation.

For how is any staff to maintain confidence in its own capacity to handle its day-to-day problems when, as in a game of chess, the other player cries constantly "Check!"?

One may try one move after another, analogous to the bringing up of reinforcements, but the word follows each effort, until it dawns upon the beaten player that he is in truth cornered, and the next announcement will be "Mate!"

Nothing could better illustrate the confidence which is felt by the French General Staff in their power to deal with the present situation. The same remark applies, of course, to our own people, and this extraordinary position of superiority (one never yet obtained by any army in war) we owe entirely to the extraordinary aptitude for air-service developed by the flying men of both nations.

If we compel our enemies to continue attacking us under, for them, the most unfavourable circumstances possible to produce, we can continue the process until the numbers at his command are no longer adequate to hold the present extent of front. Then, and then only, need the Allies send forward their own troops to hasten his retreat.

The German line is already wearing very thin in places. Events in Austria and Poland make it exceedingly improbable that their men can again be transferred from East to West; and as for reinforcements still to be found within the German Empire, I am in entire accord with the estimate given last week by Mr. Hilaire Belloc, with the exception that I think it is the very outside limit of German endurance, and that the end may come some weeks sooner than he anticipates.

CORRESPONDENCE.

GARDENING IN SCHOOL AND HOME.

To the Editor of LAND AND WATER.

DEAR SIR,—The true amateur gardener is an enthusiast who welcomes every opportunity of increasing his (or her) knowledge and skill. Good gardening books are not wanting, but what is badly needed is a practical demonstrator in the arts of trenching, digging, raking, hoeing, seed-sowing, planting, and so on, accompanying the work with short explanatory lectures of an informal character on the principles underlying it.

Teachers of gardening and Nature-study in and around London will particularly welcome such an opportunity. In the schools of the London County Council alone gardening is taught in three hundred departments, and the wide educational value of gardening in its relation to Nature-study and other subjects is now beginning to be recognised in private schools.

With a view to helping teachers and amateur gardeners alike I have arranged to give a course of ten lecture-demonstrations in gardening in the beautiful gardens of the Royal Botanic Society (Inner Circle, Regent's Park, near Baker Street Station) on Saturday mornings, beginning March 6, at 11 a.m.

All interested are cordially invited to be present at the first lecture-demonstration, which will be free. Tickets for the course (10s. 6d.) may be obtained from me at 9, Temple Fortune Lane, Hampstead Garden Suburb, N.W. (telephone Finchley 1262).—Yours, &c.,

HELEN COLT.

LAND TRAINING.

To the Editor of LAND AND WATER.

DEAR SIR,—Kitchener's Army is magnificent. I am second to none in my admiration for men, officers, and what both have achieved. I, who have watched my husband's battalion grow from three to 1,320 men, know what I am talking about; but out of our thirty-three officers I do not think one, except my husband (the C.O.), has ever heard a shot fired in anger. Perhaps one or two were in the Boer war. Anyhow, with the utmost keenness they cannot help lacking in one thing—i.e., experience of war under modern conditions. In all the letters I get from the front from brothers, cousins, and friends, the cry is, "Come and learn." One week of personal experience in the trenches is worth three months of drill book and listening to others' experiences. Would it not be possible to send relays of officers from Kitchener's battalions, two at a time, for a fortnight each, to replace two at the front in each regiment? It is well known that some of those who have been right through the war are deadly stale. A fortnight away would bring them new life, especially with the interest of imparting what they know and seeing some of the stuff preparing which is going to come to their help. On the other hand, our young officers here are deadly keen to learn, and two of them could easily be spared at a time for that purpose. I do not, of course, venture to settle details and I am not blind to the possibility of casualties occurring among the new officers, but it would not lead to any more casualties, as there would be two instead (who have borne the burden and heat of the day) safe at home resting, and I believe it would save a great many mistakes

and therefore casualties when the time comes for our ardent, but inexperienced, young officers to take their regiments abroad. It would, of course, cost Government something, but such a trifle, compared with the advantages I believe would be gained, does not count.

If, Sir, you think there is something to be said for this idea I should be grateful if it could be forwarded to the proper quarter.

C.O.'S WIFE.

AN APPRECIATION.

To the Editor of LAND AND WATER.

SIR,—I beg to inform you that I regularly receive the copy of LAND AND WATER which you so kindly send me every week.

I very much appreciate your paper, which is much valuable to me. As you may have noticed, I have already quoted several times in the *Temps* Mr. Hilaire Belloc's very remarkable articles.—Thanking you again, I am, yours very truly,

BOISSONNET

(Lieut.-Colonel).

21, Boulevard de La-Tour, Maubourg.

GRATITUDE.

To the Editor of LAND AND WATER.

DEAR SIR,—Owing to your courtesy in publishing my letter appealing for gloves and mittens for the 12th West Yorks, I have had enough sent to supply nearly every man in the regiment with a pair. I tried to write and acknowledge every parcel, but some were sent anonymously. In the name of the men of the 12th West Yorks I desire to thank most heartily all those who so generously responded to my appeal.—I am, Sir, yours very truly,

BABETTE JAKES.

Ashlyn, Grove Road, Leighton Buzzard.

HARDENING HORSES.

To the Editor of LAND AND WATER.

SIR,—I have now had some experience, ever since last November, in conditioning horses from Canada for remounts. Most have come in poor, some very poor, several far from well, and so far all have gone out in very good case.

I have tried keeping them on hard water and on mixed water, and on quite soft rain water out of a big tank. No doubt all horses do better on soft water, but in all my experience of horses, in not a few countries, I never found any so susceptible as the Canadians to the difference of water. The advantage of the all-soft is most marked. The general thriving has been remarkable, and the beneficial effects on coats and skins wonderful. Many of these horses have very bad coats and very bad skins, but with the soft water all goes well. We also not infrequently dress the bad ones all over with sulphur and train oil, worked into a stiff paste and well brushed in, against the lie of the hair, with an old water brush. The effect is magical. I have done this with bad-coated horses for years. Many tails have arrived badly rubbed, some rubbed to soreness. For this zinc and carbolic lotion or ointment is hard to beat. If a horse rubs the stump of his tail against whitewash he gets it itchy, and will

continue to rub it to its destruction. All my boxes are tar varnished to well above the top of the tail of a 17-hands horse and whitewashed above. I have not clipped any of the Canadians.

I don't believe in clipping horses that will have to stand out, and so exposing their vital organs with the thinnest skin over them. A sick horse in a box will stand with his muzzle to an open window to his advantage. A horse out in a wind will stand with his tail to it. In a cold wind Arabs put a long sheet on to below the hocks, which generally blows in between the hind legs and keeps the belly warm. For standing out in a windy, exposed position it is well to have woollen rugs with brass eyelets along each long side and to lace them under the belly. This is the North African plan for cold windy nights.

I may, perhaps, be permitted to say that in Africa in very hot weather, and elsewhere, I have never known a horse go wrong from the sun on his head; and I look upon the sun-bonnets that were at one time fashionable as nonsense, but under a hot sun horses standing out for long sometimes are seized with vertigo, and die rapidly with the sun shining on their loins. This is prevented by putting a numnah, or folded blanket, over the loins. No harm comes to them when in motion, but the standing out may be fatal.

Old Malton,

W. W. LUPTON.

TO ATTACK ZEPPELINS.

To the Editor of LAND AND WATER.

DEAR SIR,—The phosphorus-tipped bullet which figured in a recent issue of your paper would not succeed in igniting the gas of a Zeppelin. Phosphorus bursts into flame at a touch in the presence of oxygen. But a balloon contains hydrogen. Consequently the phosphorus could ignite only on leaving the balloon for the outer atmosphere.

It is, however, obvious that Zeppelins should be attacked by projectiles charged with some species of pyrotechnic mixture, but this must produce its own oxygen.

It is also obvious that a stream of bullets or shells of the ordinary type, fired at overhead marks from Maxims or quick-firers, will result in a shower of spent projectiles somewhere in the "defended" city—a shower that would mean death to many harmless citizens and much damage of property—while the Zeppelins attacked would probably be the worse merely by a few unimportant holes.

What is needed is a bullet that will ignite the gas of balloons, damage aeroplanes equally with the ordinary bullet, facilitate aiming, and fall in a harmless condition.

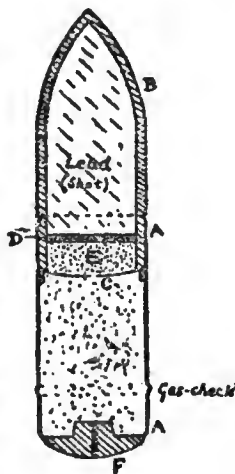
I venture to think these qualities are possessed by a projectile patented by me last December.

The pyrotechnic mixture is carried in a thin aluminium sheath A, which may be stiffened in larger calibres (up to 1½ inches) by a lining of quick-burning celluloid. The conical cap B—of celluloid or other light, tough, and brittle material—contains the load of the projectile, which makes up the weight to the normal. This load consists not of solid lead, but of filings, or very fine shot; C is a movable partition resting on a ring; D is a wad; E a charge of powder.

When the pyrotechnic mixture is consumed and the summit of the trajectory attained, the charge of powder blows the empty shell A away from the loaded cap B, and the lead promptly spills, so that (A) the cap, (B) the load of shot, and (C) the empty case fall severally and harmlessly to the ground. A shower of such objects would be no more dangerous than a severe hailstorm, and as easy to avoid—by going indoors. No one can escape from projectiles falling from a height of two or three miles and capable of penetrating roofs and floors.

This form of projectile has other advantages. In order that the gases of explosion upon expulsion may not tend to expand the case A or blow out the whole contents, the projectile is driven out by a fuse-plug or driving-plug, F. This is blown out by the gases of combustion almost immediately, but not before, the projectile has travelled two or three hundred feet. During the brief period before this release there is no very perceptible escape of sparks or smoke, so that the exact position of the gun is not revealed.

But once the plug is blown out, the projectile leaves a rocket-like trail of sparks and smoke, which by day or by night will plainly mark the trajectory of the projectile.



Especially will this be the case with machine-guns, so that to hit a Zeppelin should be as easy almost as to strike a butterfly with the jet from a garden-house. But Zeppelins are notoriously not an easy mark with ordinary projectiles.

I do not suppose our Government will adopt this device—such inventions usually go abroad. I give you these particulars so that, when Zeppelins are flying over London and the shot and shell of our defenders are raining down upon our housetops and our heads, your readers may at least have the satisfaction of knowing that they are not the victims of the inevitable.—I remain, Sir, yours very truly,

BERNARD MIALL.

THE SOLDIERS AND SAILORS' TOBACCO FUND.

To the Editor of LAND AND WATER.

DEAR SIR,—We have received an urgent appeal from the Hospital Bristol, St. Malo, France, for tobacco and pipes for the wounded men in that town, who number several thousand.

We are urgently in need of funds and should greatly appreciate assistance from your readers, most of whom are no doubt smokers and will appreciate what the loss of this little luxury is.

At the present time we have more applications for smoking material than we can possibly cope with.

Cheques, postal orders, &c., crossed "Barclay and Co.," should be made out to the Hon. Treasurer, Mr. Roy Horniman.—Your obedient servant,

W. EVAN COLLISON, Hon. Sec.

Central House, Kingsway, W.C.

THE SMALL FIRM.

To the Editor of LAND AND WATER.

DEAR SIR,—Let me say at once, frankly, that I am one of those who have "axes to grind." Not a very large one, but still an axe. You will see the edge of my axe sticking up in the course of this letter. Further, please note I am not attempting to criticise anyone or anything; I am endeavouring to state facts—from my own point of view, of course. I have ventured to write to you because I am somewhat puzzled, also because the particular question which puzzles me has not been dealt with to any extent in your esteemed journal, although Mr. Blin Desbleds did just mention it once. It seems to me to be of some importance. I am puzzled by an apparent anomaly which may very likely exist in the particular case with which I am familiar alone, but which, on the other hand, may possibly be more general than this.

Here is the anomaly. According to the speeches of Ministers and the articles, leading and otherwise, in the papers, it is of great importance that all the engineering works of this country should be employed to their full capacity in turning out war material for the use of H.M. Forces and the Allies, and one might imagine that practically every firm of that description, however small, would be doing what it could in this direction. From what one reads, even in the columns of your esteemed journal, it might be supposed that England and her Allies had to strain every nerve, not only to supply the forces in the field at the present time, but to equip the new armies now being trained, and that there is not an engineering shop in these islands which could not be "doing its bit."

But is this really the case? Is it not rather the fact that the Naval and Military authorities have the situation very well in hand, and that plentiful and perfectly adequate supplies of every kind of war material are assured from the output of the Government shops, and from that of the large firms with whom the Government in ordinary times is accustomed to contract? Let me put a concrete case.

After the war had been in progress for some months a small engineering firm which for several years had been endeavouring to perfect and market a speciality found itself faced with the following situation:

- (a) It was impossible to go on trying to make the speciality, because
 - (1) Many of its best employees handed in their notices owing to the very large bonuses and high wages offered by the big firms who were engaged on contracts for war materials. The men very naturally desired to participate in these bonuses, and the increase in the cost of living accentuated their desire.
 - (2) Raw materials, which had been steadily rising in price, finally became unobtainable in certain cases; the firms who supplied them "begging to be excused from quoting," since they were fully occupied on Government work.
- (b) The firm, therefore, had (1) either to close down and let their employees go; (2) to close down, partially cutting down expenses as far as possible, and remaining in a state of suspended animation for the period of the war; or (3) to try and obtain Government work.

After careful consideration the latter alternative was decided upon, and requests to be allowed to quote were forwarded to various Government departments and to several of the large manufacturing firms.

The majority of the big firms had no work they could offer. Some had work not suitable to the capabilities of the small firm above mentioned, and one asked for a definite quotation, but after having considered it found the prices altogether too high, although these had been "cut" to the limit which would allow the small firm in question a bare profit.

Of the Government departments, some said they had no work they could offer, several sent polite acknowledgments, followed in one case by requests for quotations for different kinds of work which have been and are being submitted to the best of the firm's ability, and one wired that an interview with the firm's representative was desired. This was followed by a very small "sample" order, and by assurances that more orders would be forthcoming. So far so good.

Unfortunately the process above mentioned has been going on for some time, and the firm's employees have been and are still worrying and asking "When shall we get the Government work?" They state, and with some justice it must be acknowledged, that "this has been going on since Christmas, and all you have to show us is one small order." It should be remembered that their friends in Leeds, on the Tyne, in the West Riding, and many other places are earning very high wages, and the large firms are continually advertising for men. Naturally they feel envious.

On the firm's side of the matter, too, there is nothing to feel particularly joyful about. For months now the wages, rent, rates, taxes, all other expenses have been going on and nothing coming in. Such a process cannot continue indefinitely. I wonder if any of your readers have ever considered what it costs to run even a very, very small manufacturing business. To take a purely hypothetical case, and one nothing to do with the firm above mentioned, it is a very, very small business, as businesses go nowadays, the wages bill of which is only £100 per week. Yet how many of your readers would care to be called upon to find that sum at the present time, plus the corresponding overhead charges and salaries?

Now, of course, we are at war, and in war someone must inevitably suffer. It may well be that it is better for the country that the small firms should close down and their workmen go to aid the output of the large firms. This will entail the entire extinction of many of the small firms for good and all, since a small shop depends on its workmen who have been trained in its speciality to a greater extent than do the large shops. Once the men are scattered the firm as an "entity" disappears.

However, this may be quite a necessary and unavoidable feature of the war, and it may be truly argued that it is not worth while to try and keep the small firms alive because

- They cannot turn out the quantities of which the large firms are capable;
- They cannot do anything like the number of different varieties of work;
- Their prices are bound to be somewhat higher, since large capital, the very latest machinery, and great output all spell economy of production.

On the other hand, the small firms may be useful in their own way, and it may be more advantageous from the national point of view to employ them rather than to let them go under. If it is (and it is a point for the authorities to decide) there is a very simple way of doing it. That is—

- Give them work suitable to their capacities.
- Give them work promptly.

You will have observed the axe in the latter part of this inordinately long letter.—With apologies, yours faithfully,

"ONE OF THE PRINCIPALS OF A SMALL FIRM."

11, Bootham Crescent, York.

THE DIFFERENT SPEEDS OF AN AEROPLANE.

To the Editor of LAND AND WATER.

DEAR SIR,—I have for some weeks been trying to find out the answers to the series of questions given below. Perhaps Mr. L. Blin Desbleds would kindly furnish them, as they are probably of interest to many of your readers as well as to me?

- Dr. Glazebrook, in a lecture reported in technical journals and daily papers, stated that one of the flying machines could travel at a maximum speed of, say, eighty-five miles per hour, and down to forty per cent. this was a minimum. Does this mean that, in favourable air conditions, it could fly horizontally at any desired speed between these two limits for half, or one hour, or more?
- Dr. Glazebrook mentioned the lower limit as especially useful for alighting purposes. Is this merely in facilitating selecting

a spot on which to alight, or in occupying less distance and time in coming safely to land?

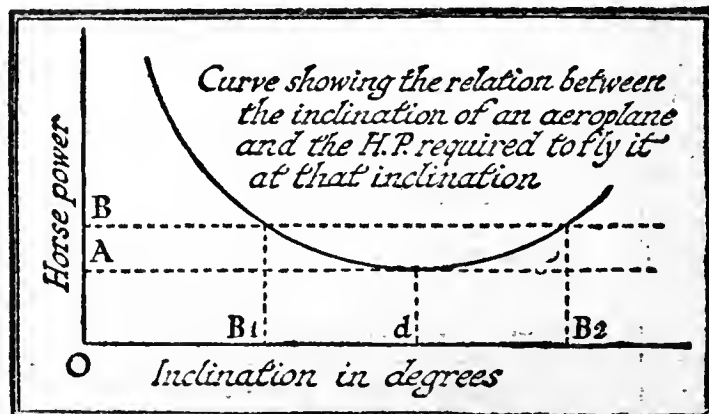
- Has the lower speed limit advantages in scouting, as in a fifty-one hundred mile trip a greater time would be taken, and consequently the country could be examined more closely?
- What are the means which allow of this range of speed? Adjustment of the angle of the wings, or of the tail, or of both?
- Is the power required about the same throughout the range, or is the motor run faster or slower as the speed is varied up or down?
- Is there any small quite up-to-date book published giving exact general information such as asked for above?

—Yours, very truly,

"ENQUIRER."

REPLIES.

- The statement means that for a certain amount of power an aeroplane can fly horizontally at two speeds—a high speed and a low one. In the instance quoted the lower speed is forty per cent. of the higher one. The accompanying curve will make the point clear. It refers to a Blériot monoplane, but all other aeroplanes have a curve of a similar character. This



curve shows two important facts: (a) there is an inclination and where the horse-power OA is a minimum; (b) there are two inclinations, B1 and B2, of the machine for which the horse-power OB, required to fly it horizontally, is the same. Therefore, for a given horse-power OB a machine can fly horizontally either at the inclination B1 or at B2. Now, to each inclination of the machine there corresponds a speed. Therefore, for a given horse-power OB, the machine can fly horizontally at a speed corresponding to the inclination B1 or at that defined by the inclination B2. If the motor was perfectly elastic the horse-power it developed could be regulated to give any amount of power comprised between OB and the minimum OA. In such a case the aeroplane could be flown at any inclination comprised between B1 and B2—i.e., it would have any speed contained within the limits of those defined by B1 and B2. Unhappily, aeroplane motors are not very elastic as regards power, and one cannot rely to fly at any desired speed between the two limits which are given by the same amount of power.

- It could be employed for all these purposes.
- Yes.
- Adjustment of longitudinal inclination of the machine as explained in (1) above.
- This is explained in Reply 1.
- I am afraid not. One could consult with advantage the Reports of the Government Advisory Committee for Aeronautics, the works of G. Eiffel, and of Dr. Prandtl. There is, of course, a special periodical literature dealing with aeronautics. The best two are, to my mind, *La Technique Aéronautique* and *L'Aérophile*. There is also a first-rate German publication, which, at present, however, is not available.

In the appeal which appeared in our columns last week on behalf of the Y.M.C.A. for funds for the construction of a Sailors' Home at Invergordon from Sir Andrew H. Pettigrew, we omitted to give the address to which subscriptions could be sent. These should be addressed to that gentleman at 8, Marlborough Terrace, Glasgow, W.

MR. HILAIRE BELLOC'S LECTURES ON THE WAR.

Bournemouth..... Pavilion..... Thursday..... 11 March, 3 p.m.
Weymouth..... Burdon Rooms. Thursday..... 11 March, 8.30 p.m.
Plymouth..... Guildhall..... Friday..... 12 March, 3 and 8.30.
Exeter..... Victoria Hall.. Saturday..... 13 March, 2.30 p.m.
Leeds..... Albert Hall ... Thursday..... 18 March, 3 and 8.30.
Newcastle Town Hall ... Friday..... 19 March, 3 and 8.30.
Glasgow Monday..... 22 March.
Edinburgh Tuesday 23 March.

Seats may now be booked for the next series of Lectures at Queen's Hall; these are to be given on the first Wednesday in April, May, and June.

Mr. Fred T. Jane will lecture at the Mechanic's Hall, Nottingham, at 8, on Wednesday, 17th March, under the auspices of the Navy League. His Grace the Duke of Portland has consented to take the chair.

Mr. Walter Leaf, D.Litt., will lect re on "The Dardenelles" at the Aeolian Hall on Friday, March 26th, at 8 p.m. Tickets, price 7s. 6d. and 2s. 6d., can be obtained from Miss P. Strachey, 53, Victoria Street, S.W.

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HEINEMANN

MOTOR AMBULANCES NEEDED

By ATHERTON FLEMING

DURING my wanderings in France and Belgium, searching for that which, under the present strict censorship, is almost as elusive as the famous philosopher's stone—"real" war news, to wit—I have had many opportunities of studying the question of motor ambulances and of actually seeing them doing the work for which they were destined. More than once have they stood me in good stead and spirited me away from awkward corners. Still it is not of the assistance which they have rendered to me personally that I wish to write, but of the very real work that they have done in connection with the removal of wounded men, and the thousands of valuable lives they have saved, not only those of our own countrymen, but of the men of France and Belgium.

Modern warfare, from the very nature of it—and from the vast number of combatants engaged—means huge casualty lists, and from the extent of it—the length of the fighting front—the great difficulties in the way of the quick removal of the wounded, heavy wastage of life owing to the absence of that immediate attention which so often saves the lives of badly wounded men, when neglect, even of a temporary nature, would inevitably mean death. To obviate this neglect as much as it is humanely possible is the mission of the Red Cross, and to those who realise what modern warfare really means it will at once be obvious that to tackle the matter successfully not hundreds but thousands of ambulances are required; also, that these thousands must be constantly at work, which also means efficiency, and a very high standard of efficiency at that—a standard which it is impossible to maintain unless there is at every hospital base a sufficiently large number of reserves and a properly equipped repair depôt and staff of mechanics.

Since my return I have been tackled by several people in connection with the subject of Red Cross work. Some of them have been possessed of enough common sense to enable them to realise the actual condition of things with regard to the necessity for a very large number of suitable ambulances; others, I am sorry to say, have been frankly sceptical and have openly sneered at the efforts of many really good schemes to raise money to buy more ambulances. To these latter I have but one thing to say: it is impossible to have too many! It is bad enough for a soldier to be wounded in the service of his country, bad enough for him to suffer the pain which his wounds bring him, but it is infinitely worse should he have to lie where he drops for hours—sometimes for days—until he dies from exhaustion or loss of blood. It is to put a stop to this kind of thing to always have at hand plenty of assistance and a sufficient number of vehicles to enable these badly wounded men to be conveyed rapidly and comfortably to the nearest place where skilled medical aid may be obtained. It is for this reason that I repeat my assertion that there cannot be too many of these ambulances in the field at any part of the extensive front.

During the early stages of the war there was an appalling scarcity of Red Cross cars. Both the enemy and the Allies do not appear to have thoroughly realised the huge number of casualties which modern conditions render inevitable, for it is a well-known fact that the German Red Cross in the first two months of the war were very badly provided with vehicles and medical supplies. On our own side matters were rapidly remedied, and our own War Office also made prompt arrangements to cope with the situation by placing large orders with practically all makers of repute for a steady supply of suitable vehicles with bodies built to their own designs.

In the early days it was surprising to see what a number of old corks of cars were sent out to act as ambulances. People at home seemed to think that any old scrap-heap of a car, with as cheap a body as possible, was good enough for the work. I used to see cars pulled up by the roadside, miles away from anywhere, with the gear-box dropping out, or the back axle gone, or some other complaint usually the outcome of senile decay. One car simply shed its body *en route*. Fortunately, it was empty at the time; had it had its load of wounded on board I shudder to think of what would have happened to them. Possibly it may interest my readers to know that many of these ambulances are expected to—and in many cases do—run anything from one hundred to one hundred and fifty miles per day every day of the week. A practical motorist will at once see just what this means and how really good a car must be to stand up to the work. Only a sound chassis can do it, so that it can easily be seen

(Continued on page 358)

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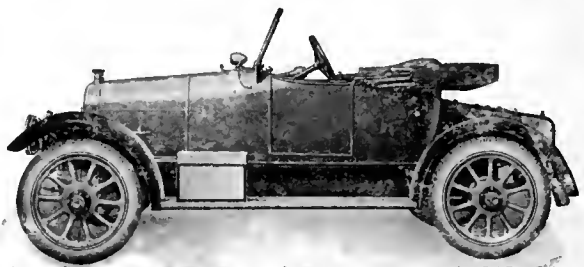
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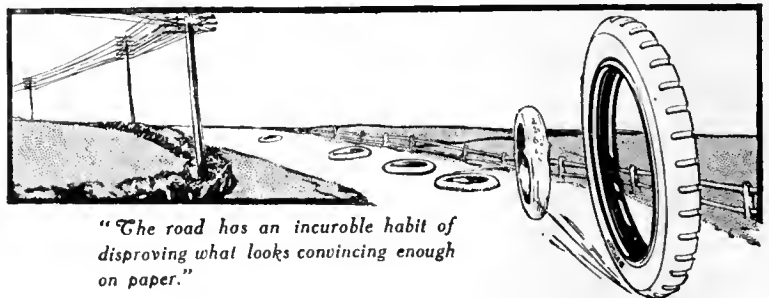


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From the original by Montague Dawson.

MOTOR AMBULANCES NEEDED

(Continued from page 356)

that the weeding-out process was fairly rapid and that not very many of the old creaks survived the ordeal.

The need for a constant supply of suitable vehicles is very real, and will remain so as long as the war lasts, for the awful road conditions, combined with incessant hard work, must of a necessity wear the vehicles out much quicker than they would be worn out under normal conditions; not only that, but as our troops advance the work will become much heavier, owing to the increasing distances between the fighting front and the coast hospital bases. Another important work which has to be reckoned with is the fact that the first large batch of ambulances have already done the equivalent of three years' work, if one compares their mileage with that of the average car's normal mileage in peace times, and that, therefore, a lot of them are due to crack up at about the same time; also, it must always be remembered that although the cars have been fairly looked after it has been a matter of sheer impossibility to give them one-tenth part of the attention that they would have received in the ordinary way.

My advice to any philanthropically minded person who feels inclined to present a motor ambulance to the Red Cross is to select a good strong chassis of some well-known make, and one of which spare parts are easily and quickly obtainable, hand it over to a really good body-builder who specialises in ambulance bodies, and who is not likely to produce an abortion of a body that is apt to fall off the chassis the first time it is subjected to rough work. Along the long straight roads of France, through the flatlands, the wind at times is very strong, and I have seen, more than once, some of these canvas and lath atrocities, which are known as "cheap" ambulance bodies, simply give up the ghost altogether and collapse like a trodden-on matchbox, enveloping their unfortunate occupants in the debris, to wait possibly an hour or more until the arrival of an empty vehicle to their relief.

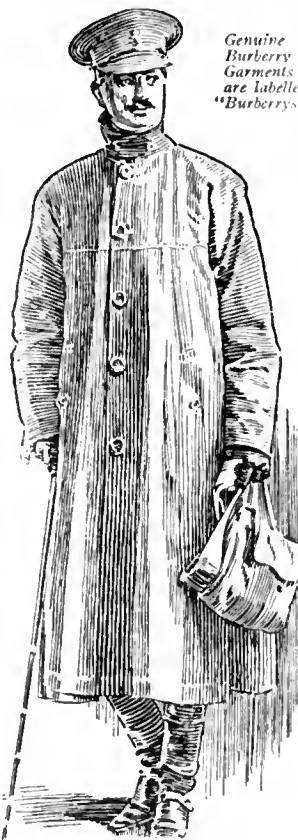
The need for a sufficiency of motor ambulances was brought very clearly before me during the ten days I spent with the French Red Cross in the vicinity of Arras, at the time of the second assault of this much-beleaguered place. At Feuchy, a little hamlet about three kilometres from Arras, there was a field hospital—a place which I shall never forget as long as I live, a veritable Inferno. Every house in the village had its full complement of dead, dying, and wounded. They lay literally in hundreds on the sidewalk—some on straw, the majority on the wet ground. Whenever there was a vacant space, due to the removal of a body, it was quickly taken up by a fresh arrival. To deal with this never-ceasing tide of wounded, to convey them to the hospitals in Arras, there was—what do you think? One large hay wagon! It was only due to the devoted services of two citizens of the town who owned cars that the majority of these poor devils were enabled to get into hospitals at all.



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THROUGH THE EYES OF A WOMAN

By MRS. ERIC DE RIDDER

The Change in Things

THROUGH the nature of things, on account of our geographical position and because of our national character, the war has seemed to many an onlooker to leave England untouched. Visitors from France have found it difficult to reconcile the sight of London going on serenely, much the same as usual, with the fact of a great nation fighting for her very existence. It is, of course, intensely difficult for them to understand, and it can hardly be expected that they would. The change in the nation—for a change there is—is far too subtle for any foreign mind to understand. It does not matter how close may be the bonds of union between two nations or how intermingled their interests may be. Certain manners and customs in the one are bound to be as a sealed book to the other. It cannot in the very essence of things be otherwise. So it comes to pass that it is only we who are living in the centre of things who can understand them as they are. We can see the change in the men who have joined Kitchener's Army. It has happened in front of our very eyes. Men who have spent all their days before in office and shop, some of whom spent nearly all their time in underground rooms away from sunshine and fresh air, have become changed beings. They have grown, they have straightened, they have filled out. They are leading a life at last—not an existence. It needs but the briefest glimpse of the faces as one of the new battalions swings through the streets on a route march to prove this. Has the war come as the liberator of thousands of men from lives that were not worth the living? One wonders. In any case, it is hard to believe that when once it is over they will settle down to the old drab routine once more. They are playing the greater game, and the old limitations are fading in consequence. Nobody can wish them back or regret this change the war has brought. In this particular way its influence is golden, and even a drab routine should melt beneath the glow.

Those Who Stay at Home

The frame of mind of the non-combatant population is more difficult to gauge. To the foreign temperament it must be baffling, if not indecipherable. We, of course, know from our personal experience that this war has bitten deep into the lives of the greater majority of people. We know that in scores of cases it has left traces which will never pass away from the lives of those it has seared. We realise that days yet to come will bring this branding iron into many a home as the casualty lists grow bigger. We see numbers of people being called upon to display courage and fortitude to an almost unlimited extent; we are witnesses to the way in which they do it, but are as silent in our admiration as they are in their grief. The discipline of war is no mere term, but the most tangible of realities, as many are proving day after day. And yet to the untrained eye it would certainly seem as if nothing out of the ordinary were happening. We can hardly blame our visitors from abroad if they are deceived by this lack of demonstration. We can, indeed, hardly wonder if they are irritated by it. It must be irritating—intensely so; the least imaginative person can see it. Even those of our Allies who pride themselves upon

their knowledge of England, her people, and their ways are apt to feel it. "I cannot," said a well-known Frenchman the other day, "understand London. If the Germans were as far from you as they are from Paris, if they were at Oxford, for instance, you might at last realise what war means." A few of us perhaps do not yet realise it; others who do betray the knowledge in no visible way. It is no wonder that the report of our indifference is a growing one.

And yet the change this war is making in all our lives is an immense one—so immense that nobody can calculate it. Only time will give the answer to the sum, and perhaps it will never be finally supplied.

A Letter from Belgium

A short while ago mention was made in this article of the Hector Munro Ambulance Corps. Last week a letter was received from two officers in the Belgian Army, which I have great pleasure in repeating word for word. They ask that their names shall not be published, for reasons they themselves give, at the end of the letter. It runs as follows:

"We have just received the number of LAND AND WATER of the 27th of February. We read in this number, under the title "Through the Eyes of a Woman, Good Work in Belgium," an article on Lady Dorothy Feilding and Doctor Munro, who, since the beginning of the war, have been so devoted to all our wounded, and we are enchanted to see that through your newspaper the names of these two brave men shall be known. But we both think that to be just you should add three other names to those two: Miss Mary Chisolm, Mrs. Gleason, and Mrs. Knocker.

These three voluntary nurses have established their ambulance in Pervyse quite near the trenches. Pervyse is shelled every day, but, nevertheless, they remain and help day and night our wounded and sick men, going near the trenches to pick them up. They are billeted in a room in a ruined house, and we believe their names must be known as an example of devotion and abnegation.

We should like you not to publish our names under this letter, for we do not want these three ladies to know that we wrote you."

Such a tribute straight from the headquarters of the Belgian Army shows that the fine work being done by Englishwomen amongst the wounded in Belgium is fully appreciated.

Girls' Patriotic Clubs

The helping hand is being stretched out in all directions; it is one of the cheering notes of these difficult times. Many signs have made it obvious that the need for girls' clubs in the many new military centres is a great one. Once these are formed they will provide a place to which girls can take their men friends, in which they can find books to read, papers to see, to say nothing of the comradeship of their own sex. A committee on behalf of the clubs is working at 33 Park Lane, W. In order to raise the necessary funds an alphabetical scheme has been drawn up. Twenty-six well-known ladies have offered to receive donations from those whose names have the same initial letter as their own. A full list of these will soon be published. Meanwhile the work has many influential friends to help it on its way. Lady Sydenham is the honorary treasurer, and Miss Emily Kinnaird, with her great knowledge of social work, is taking a leading part in the movement.

Women's United Service Clubs

So many leagues and societies have been founded for the public weal during the last few months that Lady Jellicoe

(Continued on page 360)



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THE MARCHIONESS OF LINLITHGOW

Though she is engaged with many philanthropic schemes at Hopetoun House, South Queensferry, Lady Linlithgow finds time to help in the hospital work abroad. She has raised a fund in aid of the French hospitals, and medical stores are being sent across the Channel twice a week

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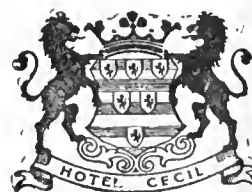
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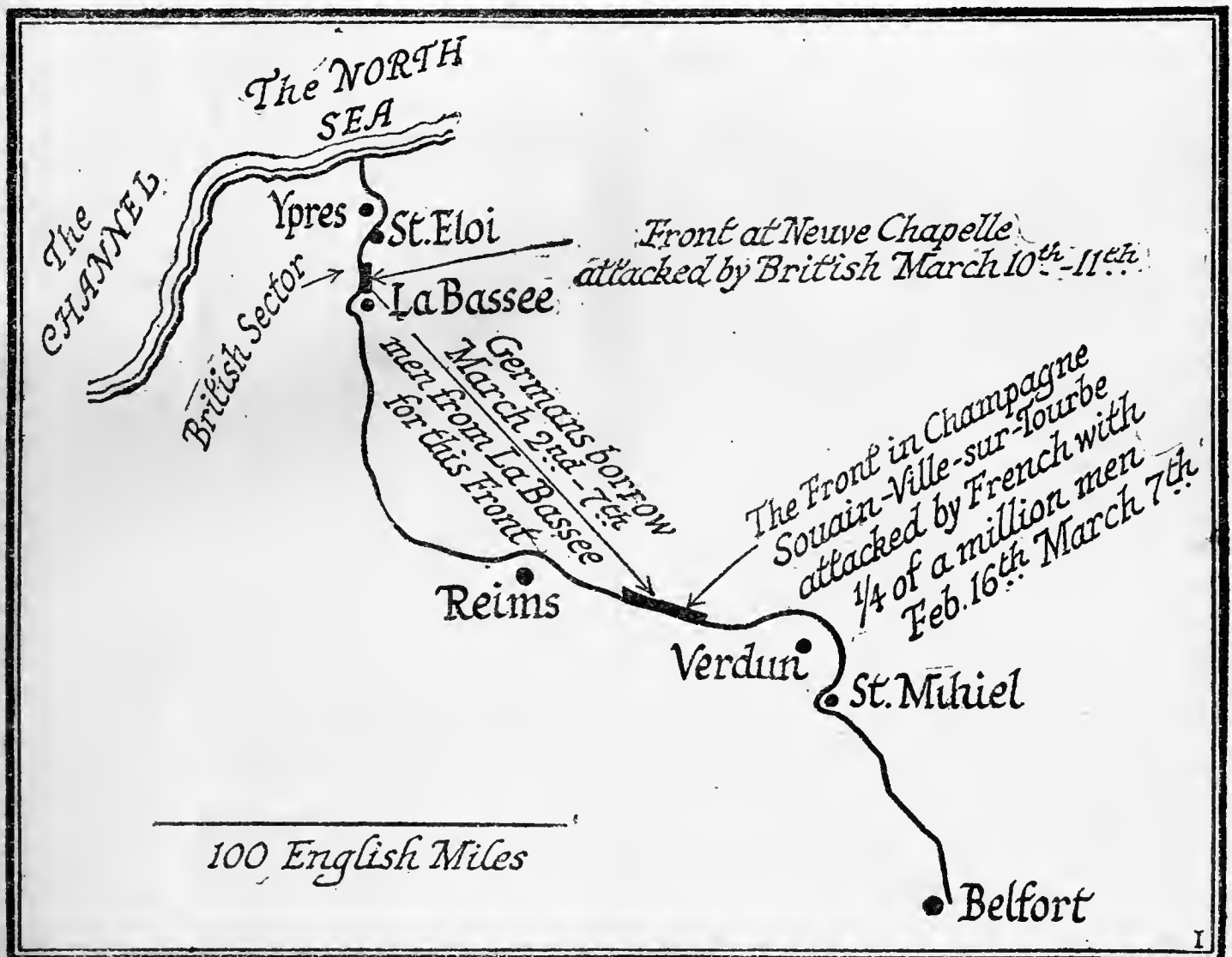
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THE WAR BY LAND.

By HILAIRE BELLOC.

NOTE.—This Article has been submitted to the Press Bureau, which does not object to the publication as censored, and takes no responsibility for the correctness of the statements.

In accordance with the requirements of the Press Bureau, the positions of troops on Plans illustrating this Article must only be regarded as approximate, and no definite strength at any point is indicated.



THE TWO ACTIONS OF LA BASSÉE AND PERTHES IN CHAMPAGNE.

THERE has been fought in the last few days by the British and Indian forces north of La Bassée, against the Bavarians and a remnant of the Prussian Guard, an action which is highly significant of the ends to which all trench warfare in the west is designed.

Let us try and see what happened.

At the beginning of last week, Monday and Tuesday, the 8th and 9th, the heavy French fighting one hundred miles to the south of the British positions in Champagne had come to its climax and had achieved its purpose. It is important to cast one's eye to that distant point, because, as will be seen in the sequel, what the British did near La Bassée was closely co-ordinated with the French effort in Champagne, and the two together exactly illustrate the now successful plan of attrition to which so many months of effort have been directed.

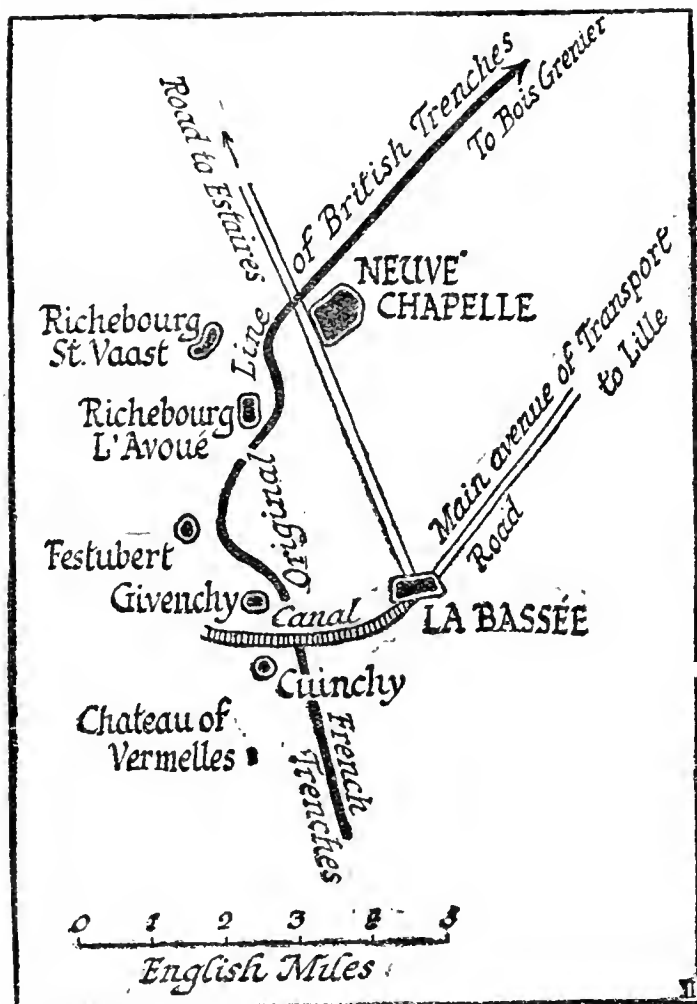
This heavy French action in the Champagne district had drawn down to the German front reinforcing troops from all along the line, but in particular east of that country in front of Lille, between Ypres and La Bassée itself, which is

where the German line faced the British Expeditionary force.

During those same days of Monday and Tuesday, upon the left of the British line—that is, in the neighbourhood of Ypres and somewhat to the south of that neighbourhood near Armentières—pressure had been exercised upon the enemy of a little more than normal kind, and, in the words of the description upon which all this is based, a definite mastery over the enemy in this section had been obtained. He had, it may be presumed, been led to expect further movement here—let us say, between Ypres and Armentières, and on the night of the Tuesday a small body of the enemy made a counter-move upon St. Eloi, just outside Ypres, which was repelled.

But with the morning of Wednesday, the 10th, it was apparent that the plan designed by the British command was of a different character from what the enemy expected, and that as a great effort was about to be made, not upon the left and left centre between Armentières and Ypres, but upon the extreme right in the neighbourhood of and to the north of La Bassée, where for some time past the enemy's pressure upon the allied line (which here joins its two contingents, the French and British) has been particularly strong.

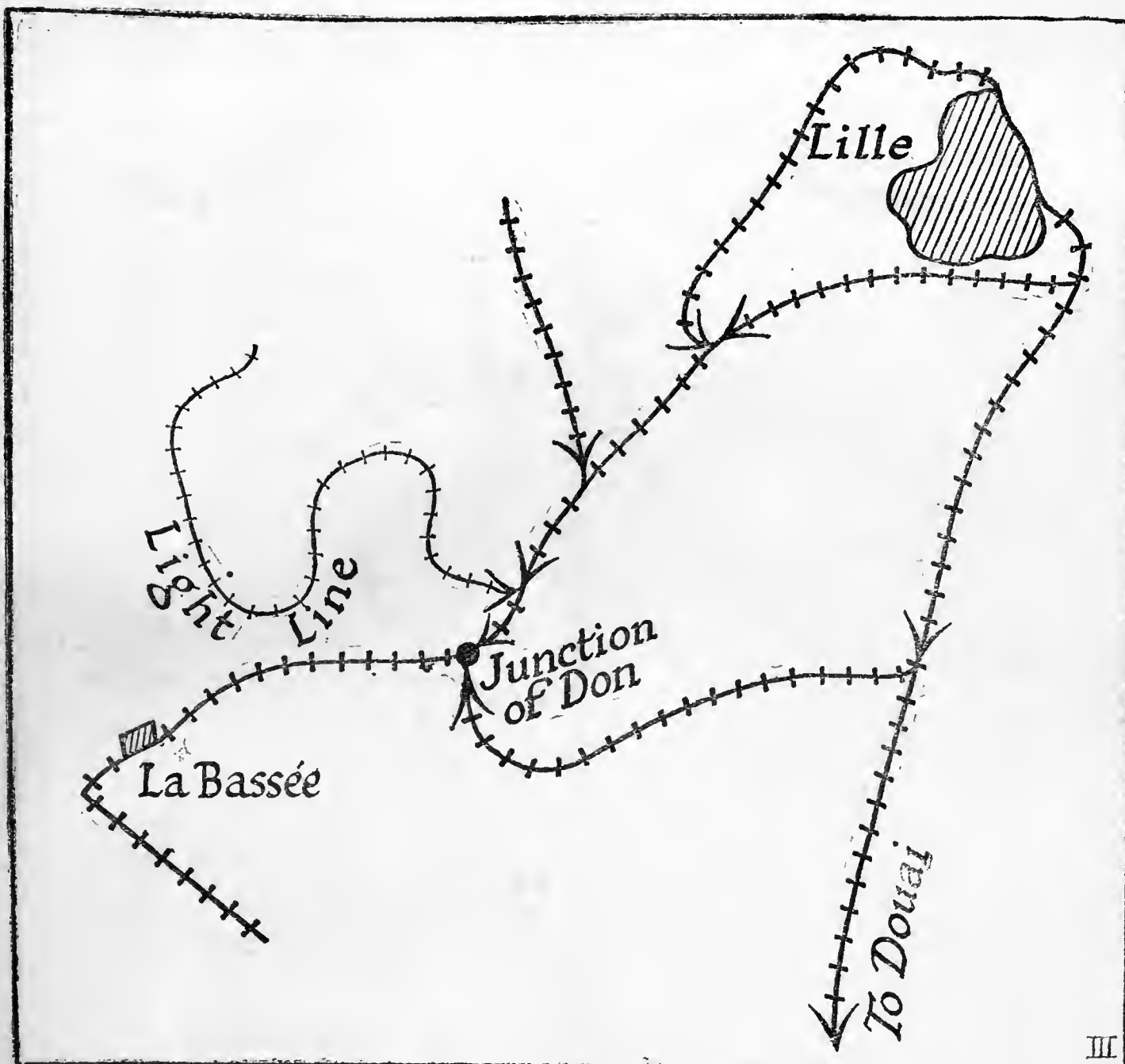
The line in the immediate neighbourhood of this field, beginning with the canal between La Bassée and Bethune, ran somewhat as follows (so far as can be gathered by an observer at home from the French and English reports). It started from the neighbourhood of Cuinchy just north of



that slight slope of land which the French carried some weeks ago, when they took the ruined château of Vermelles. The trenches covered the little village of Givenchy and then ran down the slope upon which this place is built on to the marshy flat just west of Festubert (which the Germans foolishly and Flemishly spell with an h). This point in front of Festubert represents the extreme of the indentation which the local German successes caused in the allied line in an attack they delivered mainly against the Indian troops some weeks ago. From this extreme point it went north-eastward again, not far from the lane that leads from the church of Festubert to the high road on the east, passing by the group of scattered houses near Quinquereue; thence it went north, still with a little east in it, covering the two Richebours, until it struck the high road about a kilometre behind Neuve Chapelle church. Thence it ran off due north-east to the Barn Wood, or Bois de Grenier. It was in this small section that the chief effort was to be made. If the reader will look at the accompanying sketch map he will see that the importance of the salient held by the Germans round La Bassée largely consists in the railway facilities of the place. (See Plan III.) It is fed by lines which supply it from the neighbourhood of Lille on the north-east and Douai on the south-east, which lines support one another in a whole system of communications, all based on the main railway which runs from Douai to Lille. It will further be seen that, so far as the communications with Lille are concerned (and Lille is, of course, the principal depot for all this

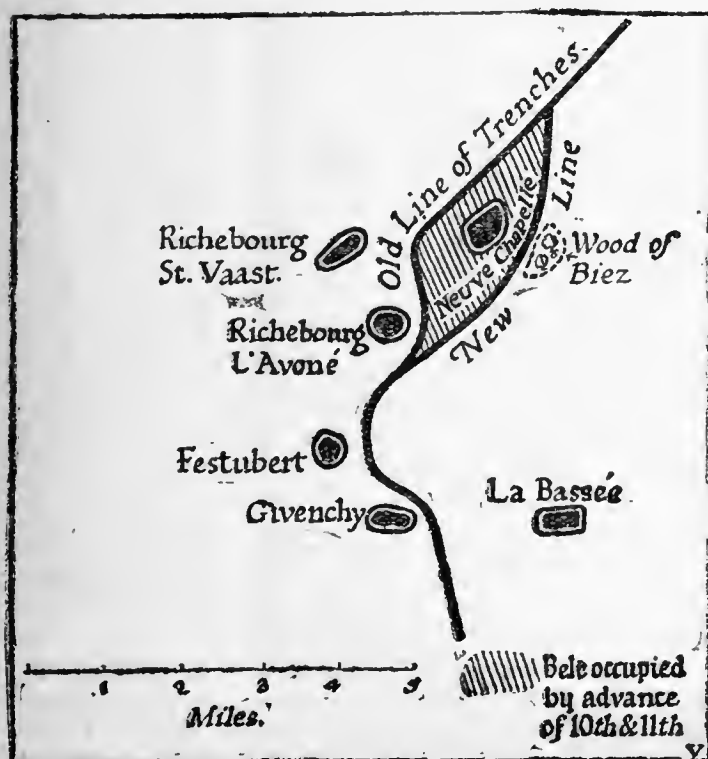
part of the German front), the junction outside the village of Don is of great importance. There concentrate upon it the two lines leading to Lille from La Bassée as well as the lines from the south and the line from Formelles in the north. That is why Don was bombarded by British airmen. Much stress has been laid upon the high road which also runs from La Bassée northward to Estaires, but this is not of any great importance, for it ends, so far as the Germans are concerned, in the air, being cut by the allied trenches about five miles from La Bassée and before it reaches any source of supply. It is, however, true that a smaller road coming in and joining this main road from Estaires at Neuve Chapelle somewhat relieves the pressure upon the main road north-eastward out of La Bassée, which is the chief artery of transport communication with Lille.

Before the action began the village of Neuve Chapelle, and the church which is its centre, lay between the two lines of trenches, British and German, the British holding apparently the line marked A B in the sketch on page 4, and the Germans the main village street marked C D. It was about half-past seven in the morning of Wednesday, the 10th, that the action opened with a very heavy and concentrated fire from the larger guns and from the howitzers behind the British lines, parallel upon a smaller scale to the corresponding deluge of heavy artillery fire which opened each of the great recent actions in Champagne. This rafale (if one may apply that term to heavy artillery, which more properly belongs to the work of field batteries) continued for over half an hour. It so dominated the German trenches that it quenched their fire while it was proceeding, and on the same evidence the men of the British trenches were free to move at will during that period. Shortly after eight o'clock, following upon this preparation, the assault was launched, and was immediately successful, the whole group of German trenches, roughly in three lines, falling into the hands of the British, save at one point, which held out till noon. This point, which thus continued until midday to form the resisting angle in the midst of the British advance, would seem to have lain somewhere near the point marked with an X upon the sketch map IV., and it was maintained against three separate attacks. It fell at last to the arrival of reinforcements, and the whole line straightened out from a point about a mile and a half north of Neuve Chapelle, south-westward, to more than half a mile in front of the village. On the south of this movement, another advance from the southern of the two Richebours all but reached the little wood called the Bois de Biez, while in the afternoon, upon the north, again in front of Neuve Chapelle, another advance covered a further four hundred yards of ground. Meanwhile one point in the line had continually held against the British advance, and this was the cross roads at Z (see plan IV.), where the village street falls into the main Estaires road and comes on towards Richebourg l'Avoué. The enemy here held out till half-past five in the afternoon, and the place was only carried by nightfall. The total result of the operations will seem to have been the occupation of a belt shaded upon the small map opposite. The next day very violent efforts upon the part of the enemy were made to recover the lost ground, the strongest being made



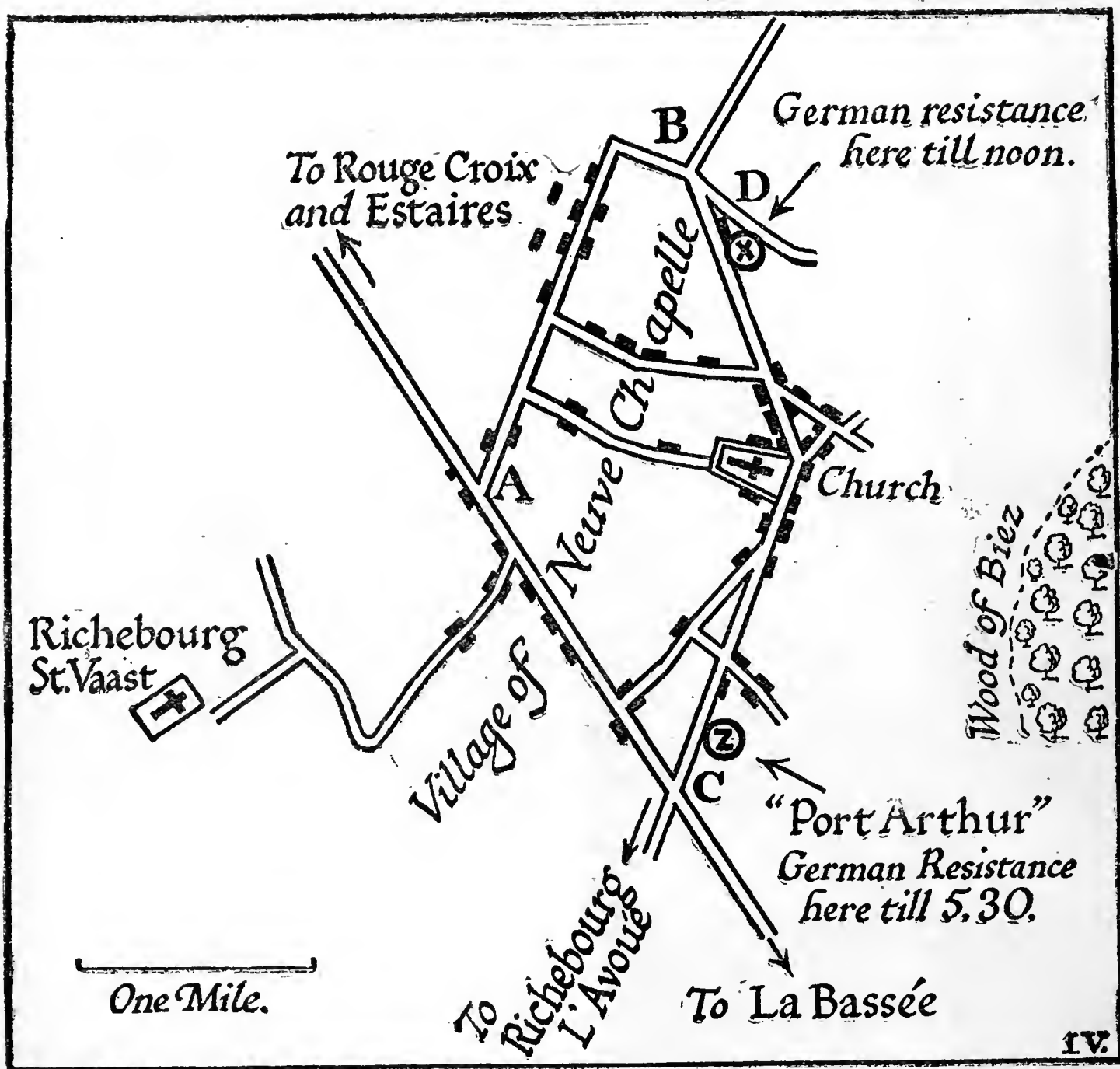
III

from the cover of the Biez wood. But the enemy failed to debouch from this point against the shelling of the wood by the British batteries on the village of Neuve Chapelle itself.



A heavy fire from the German field batteries was directed on the village, but did not result in the recovery of any ground. The operation resulted in the capture of some 1,700 prisoners, and this seems to have been the result of the direction of the attacks being both to the north and to the south of the village; at least, that is the French account. The result of these efforts above and below the built-upon area being to surround, when they closed upon the east, a considerable body of the enemy still fighting among the buildings themselves.

As to the developments following upon this considerable action, they have been, so far as the enemy is concerned, slight up to the moment of writing. One violent attack delivered at St. Eloi put the enemy, for the second time since the trench work began, in possession of the houses of that village. The attack was made by the Wurtembergers, and was carried out in the dense masses of that tactical formation which the enemy cannot abandon, because it is the strongest thing in his tradition. It was upon Sunday night that the effort was made. It was preceded, of course, by a heavy bombardment, both of the trenches themselves and of the town of Ypres, behind or near which, presumably, were stored the munitions which supplied the trenches to the south. The retirement from the village in the face



both of these very superior numbers and of a threatened envelopment upon the Monday took place during the darkness. Before dawn the arrival of reinforcements permitted of a counter-attack, which was partially successful, and by daylight the whole of the village was recaptured and the greater part of the trenches in front of it, from which the British had been driven, were also reduced.

Such is the mere recital of the event. St. Eloi, just south of Ypres, has been carried by the Wurtembergers and immediately recovered by the British. The line which ran in and re-entered behind Neuve Chapelle now bulges into a slight salient in front of it, and the ground gained at the maximum width of this belt (the fighting was against the Bavarians and the remnant of the Guard) is about 1,500 yards.

But the character of the action is of much greater moment than its scale, and it is to an analysis of that character we shall next turn.

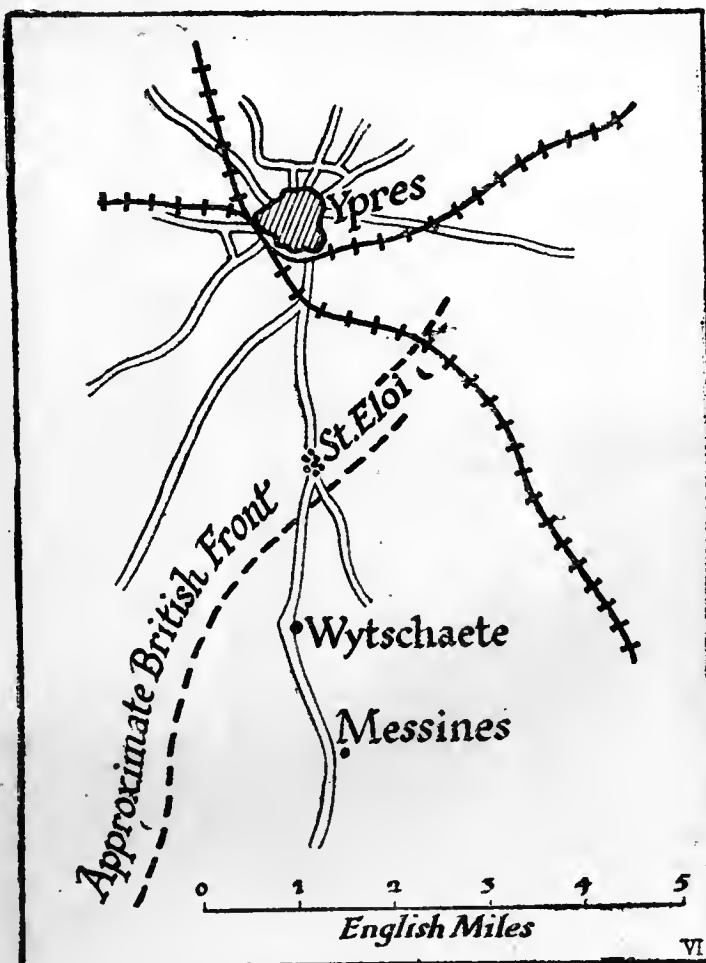
We note, in the first place, how much depended in it upon the superiority in the air which the British forces have established for themselves.

The deluging of the enemy trenches with heavy shell, which was the characteristic of the

opening phase, and which was designed in exact co-ordination with and upon the same general tactic as the plan adopted by the French a hundred miles further along the line, had only the value which it had because the positions of the enemy trenches had been exactly discovered and marked, and because at the beginning of such a deluge the machines in the air could send word of the first effects of the fire. Anyone who knows that foggy, ungrateful, marshy land of Flanders, where every debate of Western Europe has been fought out for a thousand years, knows what its sky and air commonly mean in the winter months and how an observation from above must, upon most days, be conducted with peculiar hardihood and with a peculiar sense of mastery over an enemy's power to reply whether from the ground or from the sky.

But this superiority in air work which the British have now finally, and for a long time past, achieved is further proved in another indirect and most interesting fashion.

Before the successful and violent attack upon Neuve Chapelle was launched there was an enormous concentration of material. One does not produce an artillery hell of that sort from heavy pieces



without a vast previous accumulation of transport to feed the big guns and the howitzers which are going to do the damage. In the earlier part of the war such an accumulation would have been spotted by the enemy. His air work was still the equal of ours, and often its superior. It is the sharp characteristic of this last piece of business that the enemy was taken completely by surprise. He seems to have had no idea that a concentration of this sort was going on right in front of him. He seems to have been completely taken in by the small demonstrations south of Ypres on the Monday and the Tuesday before the big attack was launched upon the Wednesday and fought its way to a conclusion on the Thursday.

It has next to be remarked that the handling of the heavy artillery, when it did come into play, was evidently superior to that of the corresponding large pieces upon the enemy's side, and that the munitions, for which there has been so anxious a call from the front, must have arrived in an increased stream.

It is further to be noted that the action contradicts what many serious observers had feared—namely, that the long winter trench work would destroy the power for vigorous attack in the men who had suffered it. That has been the experience of most wars in the past, and it was feared that it might be the experience of this war.

Lastly, the move shows in a particularly lucid manner the working of that policy of attrition to which such frequent allusion has been made in these pages. But that is so important a point that it deserves a separate passage, for we can seek for no better opportunity of examining the method at work.

THE POLICY OF "ATTRITION."

The truth is that the two combined actions, that in Champagne and that north of La Bassée, give a very clear model, upon a rather large scale,

of the working of that policy which has been at the back of all the allied effort in the West since the beginning of December, and since the enemy confined himself in the West to holding his line while using all his available men for his greater effort against the Russians—an effort so far fruitless. That policy is, as we know, the policy, of "attrition."

Everybody knows in general what that word means in connection with the trench warfare. It means the wearing down of the enemy's numbers and qualities until he shall no longer be able to hold the great length of trenches—over four hundred miles long—to which he is now pinned. When he can no longer hold that line he must shorten it—a perilous operation, further involving the loss of territory he now keeps in Belgium and France, or it will break, and in either case the critical moment will be the opportunity for the launch of the main effort against him.

The enemy, upon his side, is fighting in the East for a decision to enable him to push back troops West before that policy of "attrition" shall have imperilled him in the West, and if he can, *in time*, do this, the policy of attrition has failed; but if, on account of his losses in the East, or of his being detained there too long, or of the renewed equipment of our Russian ally, in greater efforts with the freeing of icebound ports or the forcing of the Dardanelles, he fails to strengthen himself sufficiently in the West in time, then it is the policy of "attrition" which will decide the war.

It behoves us, if we are to understand the campaign in the West, to see clearly what is meant by this policy. You wear down your enemy by causing him numerical losses in men and in material, and moral loss in strain, sickness, and fatigue.

Now, it is clear that you can thus wear down your enemy by continually attacking him, but it is also, unfortunately, clear that you only do so at a certain expense to yourself. And if that expense is equal or superior to that of the enemy you are not succeeding in your policy of "attrition" at all. For you are using more men than he is, and that is something which, seeing that he still has a numerical support in the whole field, would be a disastrous fault leading straight to defeat.

The policy thus can only be successful if you are making the enemy lose upon the whole, and taking the entire front upon an average, considerably more men in the process of "nibbling" than you are losing, and can make him suffer a greater strain than you are suffering.

At first sight it would seem that this was impossible, for the attack to which you are continually condemned in such a method is normally more expensive than the defence.

But there are certain elements of the exact situation in the West which, if they are co-ordinated, would be seen to offer an opportunity for the success of this policy, although it involves continual attack.

These elements are as follows:—

1. The enemy is not working in the West with a large reserve. He must use all the men he can possibly spare for getting, as quickly as possible, his decision upon the East. He is, therefore, presumably holding his line with only just the number of men he requires for that purpose and is keeping no considerable number unem-

played behind that line, upon the chance of using them later.

2. He requires for the holding of the line a considerable force on account of his military tradition and of his school of war. The type of discipline which promotes and enforces close formation in attack, and which reduces to its lowest value individual initiative in the soldier, has great merits in war, as this campaign has proved; but it has certain inevitable defects, one of which is that you must always pack your men, even when you are defending.

3. The allied air work and the allied growing supply of heavy pieces and their munition combined has given their heavy artillery clear superiority in the West over that of the enemy.

4. It is accepted that the sanitary condition of the enemy is in the West gravely inferior at this moment to our own. I do not bring forward the evidence for this; I only state it as it has been told to me, and I believe it to be a true statement upon the evidence I have heard.

Now, put all this together, and observe what follows upon it if the policy of "attrition" is conducted in a certain manner.

Suppose upon a particular section of the front, such as that in the Champagne district, the light chalk upland, some twenty to forty miles east of Rheims, you order for a certain short period an attack to be delivered on the German lines. You are not intended to break through. You may break through by a bit of luck, but that is not your main object. Your main object is only, for the moment, to make the enemy in this field lose more men than you are about to expend.

In the first place, your assault is backed by heavy artillery far superior to his own. He loses heavily from that.

In the second place, it is so important for him to preserve his line (where, by definition, he is upon the defensive) that he will mass men in very considerable numbers against you so as to be certain of ensuring his line against breaking.

In the third place, he can only obtain men by borrowing all up and down the line. He cannot borrow from a large reserve, for by definition he has not got a reserve. His whole plan excludes it. He can only get the greater part, at least, of his reinforcements by sending for units to all sorts of places between the Swiss mountains and the East. It takes him some time to effect that concentration, and until he has effected it he will not admit a counter offensive, because all the traditions of his service forbid this until he has secured a considerable superiority of number.

In the fourth place, when he has so concentrated a very great number against your developing attack, he will, by his consistently dense formation when he takes the counter offensive, lose more heavily than you in your open order.

In the fifth place, the superiority of the allied field artillery will particularly try him during such rushes, and that superiority is amply assured.

Finally, not only does he thus lose very heavily in maintaining his ground, first by a precarious defence, and afterwards by a dense counter offensive in the section where the first attack was delivered, but the other sections from which he has borrowed are all more or less weakened. Some one or more of them will be more weakened than the rest, and the chances are that these local weaknesses will be discovered and

taken advantage of. The allies in that distant section will deliver an attack ultimately depending on, and produced by, the main attack far away, and if the weakness of the enemy at the point of this secondary attack has been pushed too far he will run the risk of heavy local losses there.

Now apply this to the two sections—the main one in Champagne, the secondary one at La Bassée, and the plan of "attrition" becomes clear in that excellent double model.

In the first place, it becomes clear that the great action in Champagne brought down the enemy's numbers there by a prodigious amount, probably not less than 50,000 men.

And in the second place, it becomes equally clear that this action in Champagne drew men from the north, and precisely from that region where at the very moment that the action of Champagne ceased the British offensive was taken round Neuve Chapelle, just north of La Bassée.

As to the first point, we have the elements for an exact calculation.

The full French account, as published for official information in France, gives us a very accurate list of the forces which the Germans brought up upon this front, and we have further information, to some extent, from the same source, of the points from which the German reinforcements were drawn when the French attack began on the 16th February. The Germans had here 119 battalions, 31 squadrons, and 64 field batteries, 20 batteries of heavy guns. In the chief effort, the three weeks that the main action lasted, they further brought up twenty more battalions of cavalry, six of which were of the Guards, two more batteries of heavy guns, also of the Guards, and a whole regiment of field artillery—not less than the equivalent of a full army corps.

The total number of men of every arm concentrated upon this narrow front in the course of this devastating piece of fighting was not less than 200,000, and probably as much as 220,000 men, and of those, certainly one-fifth—probably nearly a quarter—were to be found in the casualty lists before the achievement of the French purpose.

For if 10,000 dead were accounted for, as they were within the zone which the French could personally survey and tabulate, you have not less than 12,000 at the very least over the whole action, and it is not credible, even in violent and close fighting of this kind, that the proportion of wounded to dead was much less than 3 to 1. It would be very astonishing if it were any less—that is, excluding unwounded prisoners.

As to the districts from which the Germans hurriedly drew their reinforcements when the front in question was beginning to be pressed in, the French have been able to identify *at least six batteries of field artillery, six battalions of the Guard, and two heavy batteries of the Guard as having come from the district in front of the British trenches in the North.*

There is another way in which we can estimate what the German losses were upon this front. The Germans have informed us (and one sees no particular reason to believe that the information is inaccurate when it tells against them) that the losses in Champagne in those days exceeded the German losses during the recent heavy fighting along the East Prussian frontier. Now, though the Germans were successful in that fighting in the East until their reverse before Pzrasnyz

at the end of February, yet it is no exaggeration to estimate their total losses at more than 40,000. They were handling in East Prussia certainly ten, and, according to the latest official French estimates, fourteen army corps, and it is not to be believed that a force of nearly or more than half a million men fighting thus day after day against a determined enemy, though successful, could have lost less than 10 per cent. We must further add to the fourteen army corps which the French calculate to have been present together in East Prussia three independent divisions of cavalry. Lastly, the French note a further piece of evidence, converging towards exactly the same result—to wit, the employment of at least five German army corps against them at this point, and that certainly, for among their prisoners they have discovered men belonging to that total number of separate corps.

It is worthy of remark that the Guard seem to have suffered specially heavily, as might have been expected, seeing that these troops, of the best quality, were called in towards the end and most murderous part of the struggle to reinforce the sorely-tried German front. It is probable that two regiments of the Guard ceased to exist as independent units. There is proof, for instance, that in one regiment—the second of this famous body—certain units had to be dealt with as follows:—

The second and the fifth companies were eliminated. The remains of the first, the sixth, and the seventh were drafted into one new company, composed of all that was left of these three.

Note, however, before we leave this business, that the whole affair was a gradual advance, very well contested by an enemy still determined; for though numerous machine guns were captured, as one trench after another was carried, not a single piece of field artillery was lost by the enemy, and after a check so serious we may legitimately regard that as proof of the discipline and orderly nature of its resistance, even to the end of the violent conflict.

As to the second point, the weakening of the German line in the north by this action in Champagne, and the advantage that could therefore be taken near La Bassée of such weakening by the English, we know that quite six thousand men and a brigade of artillery, together with two batteries of heavy guns, came from this neighbourhood down into the Champagne district to the reinforcement of the Germans there pressed by the French advance. The prisoners and the dead have, as we have seen, been sufficient to establish what units they were that were thus borrowed from Flanders for the defence of the German position upon the front between Souain and Ville-sur-Tourbe, and the exact correspondence between the twenty days of French effort east of Rheims and the succeeding four days of British effort south of Lille is fully established.

THE RATE OF WASTAGE.

We must not omit, in the presence of such news, a further reference to the rate of the enemy's wastage. The policy which hopes to continue that wastage at a greater pace than our own has already been described, but the absolute rate of wastage is not to be despised, for upon it will also depend, as well as upon the proportionate rate, the ultimate exhaustion of the enemy.

In other words, we not only depend upon wearing him down faster than we wear ourselves down, we also depend upon wearing him down at at least such a pace that he shall be embarrassed to within some defined and limited time in the holding of his present positions.

Observe that the detail of these two actions reported by the British and the French respectively have been only two sections of his line, the one but a front of twelve miles, the other but a front of four, at the most, and accounted within a space of little over three weeks for nearly 70,000 men, the British estimate being, after a careful examination of the enemy's evident losses in the La Bassée district from the recent action, not less than 17,000, and perhaps 18,000.

Now, 70,000 men is nearly the equivalent of two full army corps, and the total line upon which this kind of thing is being carried on is not to be measured in sections of twelve or fourteen miles. It is 400 miles long in the West. It is anything from 700 to 900 (according to its sinuosities) long in the East, and in the East the enemy losses have been further accentuated, during the winter at least, by the difficulties his ambulance work has experienced. It is reported (and the report has nothing improbable about it) that the enemy's ambulance work at one moment in front of Warsaw completely broke down. In those empty plains so ill-provided with roads in the best weather (and during the recent succession of frost and thaw a mass of Napoleon's "Polish mud") the succouring of the wounded must have been a task far more difficult of accomplishment than it was in the highly-organised and fully-developed West, and we know that the type of attack and the proportion of losses was not less, but more, than it has recently been in the West. It rather resembled the violent assaults upon the line of the Yser which marked the end of October and the middle of November.

What the total rate of wastage has been from the Bukowina to the Baltic in these four months of incessant struggle we have no statistics to tell us—not even a general guess is possible; but we are quite safe in saying that the proportionate rate has been double that in the West and the absolute rate treble. What more it may have been we cannot tell.

Now the significance of such wastage lies in this. That the enemy is now really fighting for time as he never was at the beginning of the campaign, though our Press was too fond of recording it as the chief element then present in the struggle. It needs but the arrival of munitions and the increase of equipment for additions very large indeed to appear in the Russian line, and these additions should be coincident with the drier weather following upon the thaw of the spring. And at the same time should appear the new contingents in the West—that is, the recently trained younger French levy, and the much larger new British armies. It is a sort of race between the advent of all these reinforcements to the Allies and the pace at which the wastage of the enemy is continued. He cannot reinforce—whatever our alarmist Press may say—at anything like the rate or to anything like the amount which the Allies can reinforce when once equipment and munitions reach the Russians, and when once our own new contingents are fully fitted out for service abroad.

Every such piece of news as that from Cham-

pagne or from La Bassée, though it does not mean and is not intended to mean the approaching breaking of the German line, does mean the further grave weakening of the total force with which the enemy can hope to meet the main advance when the moment for that main advance has sounded.

THE GERMAN AND FRENCH COMMUNIQUEES.

There has been given us during this week in connection with the movement just described a very excellent example of the contrast between the German and French official communiques; and we shall do well to compare the two, not because it is profitable to abuse an enemy or praise an ally, but because our judgment of the war is largely based upon the official communiques issued by the five principal belligerent powers, as an appreciation of their methods is essential to such a judgment.

It has already been pointed out in these columns some weeks ago that the French and German communiques are distinguished by two elements in the German report:

First, it is detailed and accurate in certain particulars, and has maintained that accuracy from the beginning of the war.

Second, it contains statements often detailed, but deliberately and positively false.

It is, we may remark in passing, to no purpose to abuse the enemy for this second feature. It is a feature deliberately inserted with a legitimate military purpose—to wit, the confusion of the enemy.

Now to this second feature there has been added in an increasing degree during the last few months a third feature, which it is important for us to note particularly if we desire to follow the state of mind and the aims of the enemy since the war entered its present phase. This third feature, as has been also pointed out in these columns, consists in vague statements applying to large operations in a general fashion, and apparently betraying a puzzling lack of judgment in a people who have so carefully considered all the chances of this great war, which is of their own making and brought about at their own chosen hour.

The features of the French communiqué can, I think, be put down with equal simplicity. The French communiqué has for its cardinal character the omission of all things whatsoever that may be of advantage to the enemy. However indirect this advantage, it is avoided by a reticence pushed to a degree which would perhaps be impossible anywhere else than in France. For the French conception of national discipline, utterly different from the German (for it is spontaneous), is quite as severe and certainly more practical.

Coupled with this reticence, the French communiqué often admits deliberately optimistic explanations of a reverse or check. I mean that it does not only keep silent about numbers, casualties, movements, and so forth, but it will frequently counter adverse rumour by publishing an official explanation intended to support the national temper.

We must remark that (as is to be expected) this second feature in the French communiqué has been less frequent during the last phase of the war than at the moment of great trial in the first weeks of active operations.

Lastly, we note a feature increasingly common in the French communiqué since the corresponding feature appeared in the German communiques—I mean the detailed reply to those detailed false statements which the enemy has recently increased in number.

Now, in order to have a reasonable estimate of both witnesses in this series of evidence, we must, if possible, estimate not only their habits, but their motives for these habits.

Why does the German communiqué show the features we have noted in it?

Why does the French communiqué show the features we have noted in it?

The accuracy in detail which is a uniform feature of the earlier German communiques, and which is still a leading feature in the present ones, proceeds, I think, from a tendency observable in all modern German work, which tendency a friend would call "thoroughness" and an enemy "plodding." As in their historical works and in many other departments of modern German activity, so in these military records, the modern Germans have an appetite for detail, and whenever you consider detail you are unusually inclined to accuracy in detail. It is indeed the mark of too close an attention to detail in any department of thought that, while your general judgment is often impaired by it, your precision of particular statement is improved. And, other things being equal, a German official record will usually be more trustworthy for its details, will contain less errors due to emotion, fatigue, or laziness, than will corresponding records of other societies.

In a mood which does not lend itself to falsehood, or in the absence of motives for the same, the German communiqué has been thoroughly trustworthy.

What, then, of the inaccurate elements which we have noted?

It has been pointed out frequently in these columns that the main motive in this has been the misleading of the enemy commanders by statements which may be accepted for the short time by those commanders, and would, if accepted, disturb their plans.

For instance, the enemy receives a severe check, loses a great number of men and guns, and is occupied in a confused and too rapid retirement. His commanders are not for some little time able to compute the exact extent of their losses. If the moment be immediately seized and the Germans publish estimated losses much larger than the true ones, and as much as the enemy can be got to believe during this period of confusion, it must affect that enemy's plans adversely, and this fact is magnified if, intermixed with the exaggeration, you mingle undoubtedly true bits of statistics. For instance, you say:—

"In the lake near Lotzen we discovered such and such a number of heavy pieces which the enemy had thrown in during his retreat, because he could not take them away with him, and we captured such and such a number of unwounded prisoners."

The commander of the defeated and retiring force surveys the great confusion of his command and knows that he has lost very heavily, and is, perhaps, ready to accept, for forty-eight hours or so, before the full statistics come in, the figures given by his adversary. He cannot well tell of the men missing, what proportion are killed, what wounded, and what unwounded prisoners. If the

proportion of the latter be very high, it may make him believe that the moral of his forces has been seriously affected. Meanwhile he *does* know that the heavy guns in question *were* thrown into the lake, and his knowledge of this detail tends to make him accept the rest.

Finally, if things are not going as civilian opinion has been led to expect, it is of both military and political importance to reassure that opinion as best one can. No Government and no General Staff neglects that duty; and what we have to remember in the German performance of it is not so much the exaggeration or inaccuracy as the curious clumsiness (as it seems to us) which marks this third feature.

For instance, after such a communiqué as that which I have just quoted, there may be added some such phrase as "the enemy is now dispersed and our troops are occupied in collecting the enormous booty left behind in his rout." This phrase may correspond to a very different reality. In point of fact, perhaps what happened was that the German force, having got too far from its real head, was ahead of its supplies, and was unable to make good a vigorous pursuit. But the truth is put in this more flattering fashion in order to reassure opinion at home and to console it for the absence of further favourable developments.

When we turn to the communiqué the Germans have issued with regard to the prolonged French effort upon the Souain—Ville-sur-Tourbe front (it lasted for the ten days from the 26th February to the 8th March), we get an excellent example of all these features. We are told that the French fired about 100,000 heavy shell. That is accurate. We are next told that the front was at first held by "two weak Rhine divisions" against a quarter of a million men. This is a falsehood so large and clear that at the first reading it astonishes one; but the motive of telling it is soon apparent, and from its character we can judge the nature of similar statements in other evidence of the same sort. It does not need any detailed proof to assure all the soldiers, and even most mere students of war, that the front in question could not possibly have been held in that fashion. Two depleted divisions means something less than 30,000 men—i.e., something less than 2,000 men a mile. Further, the point in question was not held; it gave way. But the statement is not without a cause. It has for its main object the confusion or mis-information of the French commanders, who know perfectly well that it is nonsense. It has for its object the heartening of domestic opinion. Hence the sentimental detail of the district from which the defenders were drawn. We shall appreciate, however, that such statement is not as clumsy as it looks when we remember that the German civilian population cannot, any more than the French or our own, hear the full truth, or indeed any truth which their Government does not desire them to hear. It will undoubtedly prove, when we can get the real facts in detail in some official history of the war, that troops from the Rhine provinces were present; that they withstood in some part of the field a very formidable assault for some little time; that they behaved with gallantry; and that, perhaps, they were for the moment isolated from support. It will also probably appear that about this time there was danger of grumbling in the Rhine provinces, and that this emphasis upon the deeds of

the troops from that district was of political advantage to the German Government.

Next turn to the statement in the same communiqué that over 2,000 unwounded French prisoners were taken. That may be true, or it may not. Most probably it is untrue, because in a prolonged but successful advance a capture of this sort, though quite possible, is unlikely: it is rather the kind of thing you get in a retirement. But the French commanders can hardly have a positive knowledge upon the subject. They will discover that a certain number of men are missing, and the more the enemy can get them to believe there are missing unwounded the more they may affect the French commander's judgment of the condition of his troops; although it is a doubtful game to play with the army of Champagne, the temper of which is by this time thoroughly well known to its leaders.

Note again the characteristic compliment paid to the courage of the French troops. That has been an official note in the German despatches for some time past. It is connected with the idea that the French are ready to make peace and are fairly sympathetic to the German service, and this in its turn is a parallel to what we know of the really startling incapacity of modern Germany to understand things outside itself—a feature often present in nations after a considerable period of rapid material progress. Finally, observe the impossible remark with which the communiqué closes: "The French lost 44,000 men, which is about three times the amount of the German losses." Whether the French lost over 44,000 men, we have no evidence to tell us, though it is an unlikely figure, but that the German losses were only 14,000 to 15,000 men is more nonsense. But, it is not nonsense written without a cause. The French know, of course, more or less, what the German losses have been, because they have advanced over the ground upon which these losses have taken place. For instance, they have counted the dead, and they rendered an estimate of 10,000. It would be foolish for the French to lie in this matter, because the Germans approximately know their own losses by this time, and upon a general advance of this sort thousands of Frenchmen are able to corroborate the official estimate or to discover its falsehood, if it is false. Seeing that numbers of those who fall are buried by the enemy or are withdrawn upon the point of death, we may be fairly certain that the total losses in dead were more, and not less, than 10,000, and we may be equally certain that the total losses in wounded and unwounded prisoners were at least three times as many. That is the very lowest multiple one can possibly take. The German statement, therefore, is not even intended to deceive the enemy. Its falsity is clearly designed to a political and domestic end. And here again we can guess what that end may be.

All observers of recent actions in the East and the West are agreed upon the enormity of the German losses. We further know to what that high percentage of loss is attributed. It is attributable to the tactical traditions of the enemy; his fighting in close order; to the superiority of the Allied heavy artillery in the West, which in its turn is due to the superiority of the Allied air work, and its repeated chances during such work, as in Champagne, with its frequent retirements of the enemy in masses over open field, and its equally frequent

counter-offences for country almost devoid of colour between the occasional stunted pine and larch plantations with which the policy of Napoleon III. studded this region of the camp of Chalons and its neighbourhood. The dry, poor chalk soil is often capable of no other crop, and the plantations take the place of what was once useless waste.

In the French communiqués, both that preceding and that following the long German communiqué of this week concerning this section of the Western front, we have also this feature, peculiar to the French records which have been noted.

Thus there is a remarkable absence—common to all these statements—of figures, which could be of no use to the enemy. Masses of German prisoners have been taken. We know this from the evidence of eye-witnesses describing columns as they passed through to the rear. Portions of the French Press and certain private letters bear sufficient witnesses to what we would, in any case, have expected to be the result of so prolonged and successful an effort. But when it would be at once interesting to the student and of high political value in heartening opinion at home, the full figures of these captures are not given us. It is a fixed French principle that they should not be disclosed. Captures by the British, both of guns and men, are differently treated, and the German method is in high contrast, for it perpetually mentions the number of prisoners captured, and usually makes a point of exaggerating this.

The French communiqués are again largely concerned with a detailed refutation of the German claims. They are careful to mention what the enemy already knows, the extent of his concentration. They even point out—what is valuable for us to learn and know—news of the enemy, the way in which that concentration was effected by borrowing men from other parts of the line.

On the other hand, they say nothing of their own losses, rarely even to make them out less than the enemy claims.

In general, we may say of these two present communiqués that they are not only the latest but the fullest examples of the principal witnesses we have in the judgment of this great debate, and are a fair guide to the temper of those witnesses in the future evidence that will be laid before us.

THE EASTERN FRONT.

On the Eastern front there is virtually nothing to record this week—or at least in progress—worth analysis at the moment of writing (Tuesday evening).

It is evident that the forcing of the Dardanelles is going to be—what everyone who knew the district and the means employed was prepared for—a lengthy business.

The chief element in the delay is, of course, the weather in that district and, at this time of the year, the “black sea scud” hanging low and preventing all air work, the gales from the North, together make the chances of bombardment only available sometimes after rather long intervals; with a very high wind or with low-lying clouds, it is impossible for the machines in the air to correct the indirect or long-distance firing of naval guns; and, with this fire uncorrected, even the largest high-explosive shells at such ranges would be wasted.

The chief drawback to these delays does not

lie in the postponing of the task—though that is of considerable moment to the Russians—it rather lies in the time which the larger interval gives the enemy to recuperate his forces. Unless a permanent work has been totally destroyed, the guns dismounted, or shattered, or the mountings displaced, a few days' grace will enable the defenders to set things more or less right again. Whereas a certain number of shell of a certain calibre—say, 11-inch shell—falling upon a permanent work, may destroy it if the delivery of such shell be unintermitted and rapid, a very different effect would be produced if the same number of shell is only delivered in small groups and after long and irregular intervals. The moral effect alone counts here, and the material damage done by a partial bombardment is, as we have seen, capable of being restored if a sufficient breathing space is afforded.

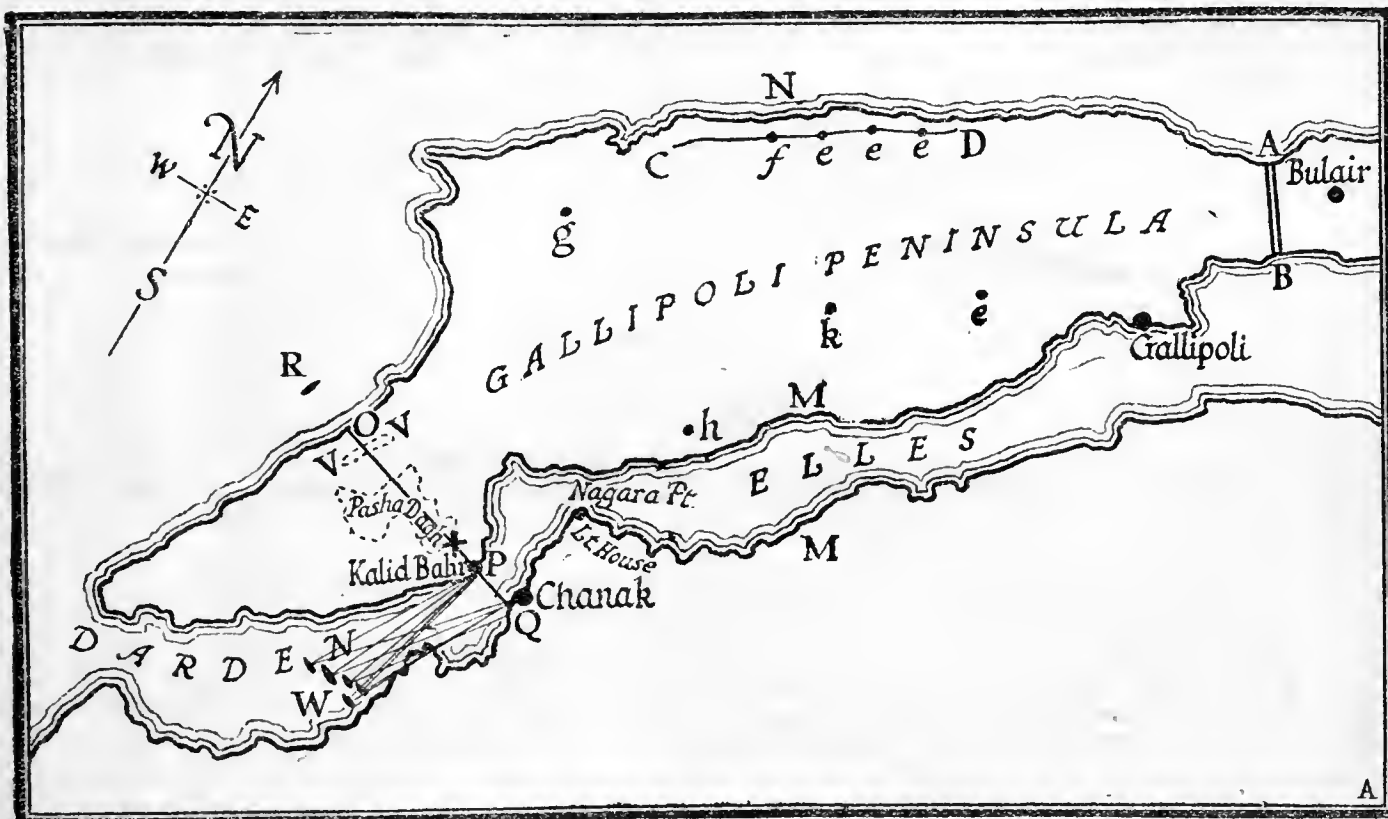
Further, the reader must remember that when you are dealing with over a score of permanent works, as is the case with the Narrows, the difficulty is multiplied by much more than the mere multiple of guns. A group of permanent works like this are much more than ten times as formidable as a couple of works would be. First, because of the way in which they support each other against a gun platform upon the water; secondly, because of the way they can support each other against attack from land. No permanent work can be regarded as finally reduced until it has been destroyed to the satisfaction of the landing party. Its mere silence, even its wrecked appearance as seen from above, does not completely guarantee shipping that may have to pass it for the future. Until a landing party has occupied the work, and either completed the necessary destruction or satisfied itself that there is no more to do, the work may still be formidable.

Where you have a small group of works this task is much easier in proportion than where you have a large one; for against the parties landing to effect the final destruction of partially wrecked forts and batteries, other forts and batteries still in existence can fire.

All these considerations combined should moderate the expectations of those who looked forward, after the first unexpected success of the Allied Fleet in entering the Straits, and after the development of the novel principle of attack to which the Narrows was subjected, to a rapid advance by us upon Constantinople.

There is, of course, as was pointed out in this paper at the time (and German criticism was made to that effect), the problem of the land forces. Until the shores of the Dardanelles on either side are sufficiently held, commerce cannot use that channel.

The problem of holding the land is partly political and partly military. Only those acquainted with the Near East (which the present writer is not) can decide how far a political threat to the capital would disarm the Turkish armies in the field; such a threat to the capital might be delivered by the fleet without procuring the surrender or the withdrawal of the troops to the south. The military problem, supposing the fleet to be successful in reaching the Sea of Marmara, but not successful in causing the withdrawal of troops through political action, is two-fold. The occupation of the Straits by the fleet, should the forcing of them be successful, will prevent the Asiatic shore from reinforcing the European. But the reduction or the dispersion of troops waiting



upon the opposing shores, is very different in the European from what it is in the Asiatic case.

On the European side it is evident that everything depends upon the Isthmus by which the Gallipoli peninsula hangs to the mainland; the Isthmus of Bulair.

That Isthmus, as has been repeatedly pointed out in these columns, is completely subject to gun fire from the open sea. It is already untenable by the enemy, and would, if it were possible, be still further secured by ships acting from within the Sea of Marmara. A sufficient force landed here could contain for an indefinite period, until exhaustion and surrender, any garrison that the enemy may have put into the Gallipoli Peninsula, and if such a force were supplied at its leisure with a sufficient siege train, it should make sure of an advance sufficiently strong to destroy any temporary works the enemy might erect in that tangle of hills.

But on the Asiatic side the problem is very different. It really depends upon the power the enemy may have to furnish himself with munitions, and particularly with a good supply of munitions for his artillery.

Now this depends, of course, upon whether he has depôts of such munitions, and upon his communications with the same, and it is to be presumed that this factor has been the main one in deciding the bombardment of the coast near Smyrna and of the railway serving that place; while it is probable that action near the Bosphorus later on, if the forcing of the Dardanelles be achieved, would similarly starve the Asiatic side of the Dardanelles from the north. But if very large stores of munitions are already accumulated in that district, the problem of holding the Asiatic shores of the Straits upon a sufficient belt to make the commercial passage through them quite safe and continuous will be a serious one.

THE CARPATHIANS.

We have of movements in the Carpathians no news of importance, save a vague Austrian communiqué to the effect that a considerable battle has developed north of the Uzog pass in the foothills, and claiming a considerable number of prisoners;

and a further rather more detailed Russian account of the same action—which reports nothing decisive. There is no development worth noting, either by way of the expected Russian re-advance into the Bukowina or the debouching of the enemy from the foothills into the Galician plain in the neighbourhood of Przemyśl. It looks as if, at the moment of writing, the opposing lines were occupying very much the same situation as they did upon the very important capture of Stanislaus by the Russians, not quite a fortnight ago.

On the East Prussian front there is the same stagnation and lack of news. We had some days ago an announcement from the Russian side that the Germans were massing a very important force to act again in the region of Przasnysz, and to attempt once more the march southward upon the communications behind Warsaw, in the neighbourhood of that town, and the forcing of the Narew line upon its lower part, near Neo Georgievsk.

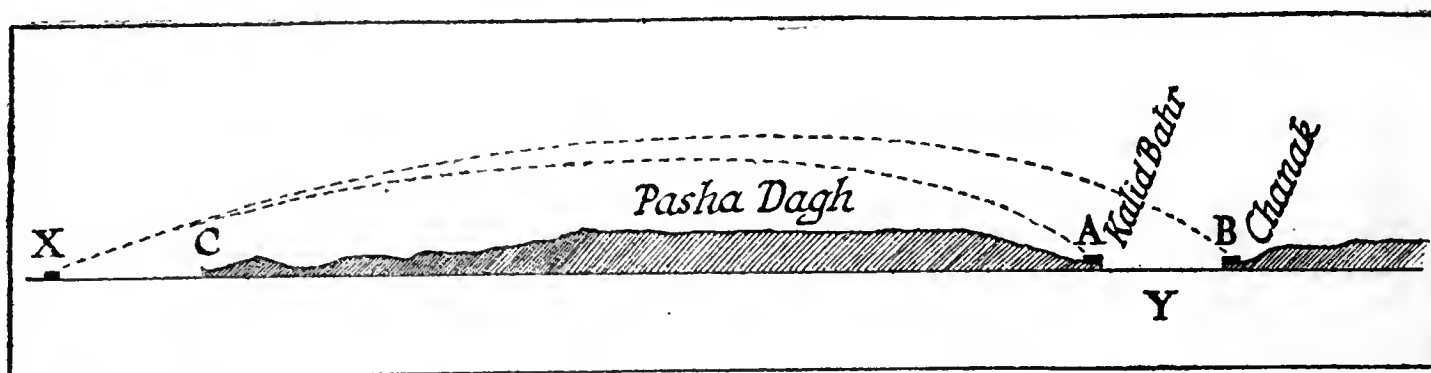
We find no further news, however, of this movement, and if it develops, shall probably not have the result of the development until next week.

The German papers, by the way, are strenuously denying that there was any movement of troops from the West to the East in aid of Von Hindenburg's great concentration at the beginning of February. If this criticism be directed against the absurd exaggerations which we have had in the Press, representing the Germans as perpetually moving vast bodies backwards and forwards between the two frontiers, it is salutary and seasonable, but if it is intended to convey that no movement whatever has taken place, it is to be controverted by the clear evidence of prisoners and material captured, for we know in this positive manner that one corps at least of the 10th, 12th, or 14th that were massed in East Prussia, and still remain there, was the 21st corps from Alsace-Lorraine, and it was this corps which alone succeeded in piercing for a moment the defensive line by passing the Niemen just below Grodno. It has, of course, since achieving this feat—which was about a month ago—fallen back again to the neighbourhood of the frontier, and now lies upon a line running from the woods just east of Augustowo.

THE WAR BY WATER.

By FRED T. JANE.

NOTE.—This Article has been submitted to the Press Bureau, which does not object to the publication as censored, and takes no responsibility for the correctness of the statements.



THE DARDANELLES.

UNDUE optimism, or, at any rate, a total failure to appreciate the difficulties connected with the forcing of the Dardanelles, continues to be a feature of the situation where the mass of the general public is concerned.

We have much airy talk about the "wonderful progress of modern gunnery" rendering this or that possible, as witness the nonsense which has been written about "the wonderful guns of the *Queen Elizabeth*," enabling indirect fire to be used over the Gallipoli peninsula.

It, of course, makes good headlines to attribute it all to modern gunnery, aircraft observation, and so on and so forth; but, as a matter of fact, aircraft (if employed) were merely a refinement of methods which were common over almost equal distances so long ago as the Russo-Japanese War.

In this particular war, at Port Arthur, indirect fire was the order of the day more often than not. Early in the war, using the heights as an observation station, the Russian *Retvizan*, herself invisible, landed a couple of 12-inch shell right alongside the Japanese *Fuji*, firing over a considerable neck of land and at a range of something over ten miles. By canting the ship, and so securing extra elevation, the same thing could have been done at fifteen. The Japanese at the time put it down to land forts; but as none of the land forts had such guns, this idea subsequently became untenable for obvious reasons.

Again, Captain Kuroi, commanding the Japanese naval shore battery, dropped many a shell on the Russian Fleet in Port Arthur, although it was quite invisible to him. For "observation" he relied partly on a captive balloon with primitive signalling arrangements, partly on observation from ships outside, which had to be careful to keep well away from unreduced land forts.

Later on, 203 metre Hill was captured, and an ideal observation station secured; but plenty of damage was done before that.

So far as the Dardanelles are concerned (see plan), any battleship at X, given an observing ship at Y (more or less out of range of A and B), could at any time within the last ten or twelve years shell A and B with considerable accuracy, the necessary information being wirelessly directly or indirectly as per plan on page 13, using Z as a repeating ship.

Now all this has been obvious for years. Equally obvious is it that at any time during the period, supposing the forts at the entrance to be destroyed, the key to A and B must lie at C, which should have been fortified accordingly.

That no defensive works were erected must be put down to Turkish casualness or stupidity. It is folly to suppose that the Germans failed to recognise the joint in the armour, much as they may have relied upon the old verity that the fort is superior to the ship. Possibly they calculated that reverence for that doctrine would alone suffice to save the Dardanelles from any attack. Possibly also they never really expected to be able to drag Turkey into the war, and having done so, found it impossible to obtain the necessary guns to defend Chauak's heel of Achilles.

It has also to be remembered that merely to erect a small extemporised six-inch battery is a matter of a week to a fortnight at the least; to establish really efficient big gun forts must at least be reckoned in months, and more probably in years, even were there no problem of finding the guns, mountings, ammunition, and other details.

Here let us take a chess analogy. Everyone who has merely a nodding acquaintance with the game (which nodding acquaintance incidentally represents more or less accurately Turkish knowledge of modern war), knows the wonderful things that could be done against the most skilful opponent, if *only* an extra move could be worked in here and there. Black is handicapped from the first by being a move behind; in this particular Dardanelles game Fate or stupidity, or both in conjunction, have put Black (the German-Turkish combination) three or four moves behind-hand.

But—if we are to obtain any level-headed or correct estimation of affairs—we must keep all the superlatives out of court. We must never forget that circumstances have been on our side, that the stars have fought against Sisera, that an intensely difficult and dangerous operation is being carried out, and that its success or failure depends entirely on three factors:

- (1) Outranging.
- (2) Making the uttermost of every weak point in the defence.
- (3) The psychological effect of slow but sure progress.

This, of course, in no way coincides with the general public view of the Dardanelles affair. At any moment the third factor may intervene and render all else nugatory. But failing it, the task is colossal; and, had the Dardanelles been German, I for one am absolutely convinced that they would have proved impregnable even against outranging fire, since there is no limit to the armour which can be applied to a fort gun, nor any limit (other than the financial one, which can be neglected) to the number of guns which can be mounted.

This fact the Germans assimilated many years ago, and they have fortified their own coasts accordingly. When, eventually, the very third-rate defences of the Dardanelles succumb to overwhelming naval force, we may expect something in the nature of a public demand for similar operations against the really first-class defences of Cuxhaven or Heligoland. We may also expect to find the German Press and its naval experts explaining at great length that forts are hopeless against ships, in the hopes that they will be quoted over here.

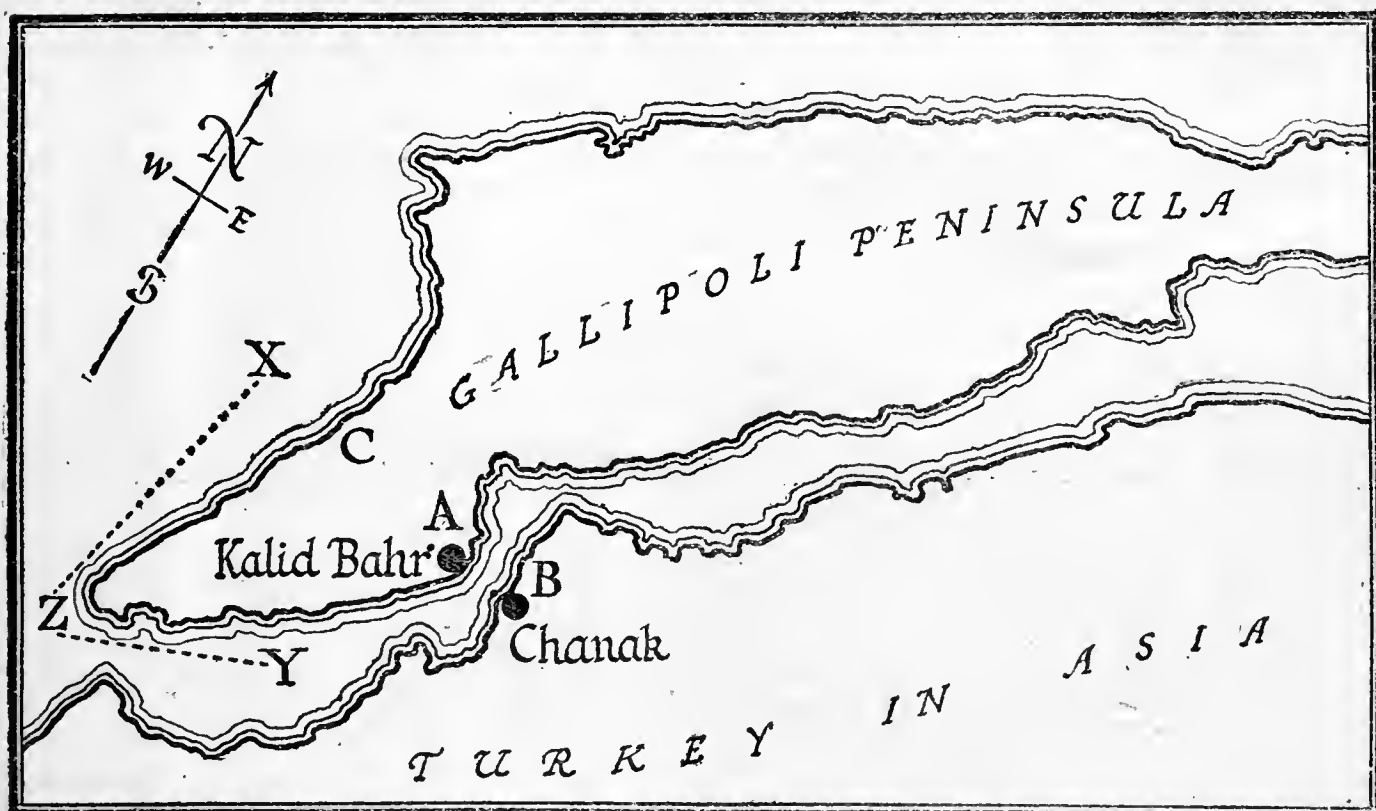
It is here that danger lies, danger of popular attempts to force Admiralty policy. Such attempts do not stand to succeed, but the occurrence of them to any extent is bound to encourage the enemy as a sign of weakness. Herein lies the true inwardness of "Trust the Admiralty."

THE SMYRNA OPERATIONS.

The importance of the Smyrna operations is somewhat apt to be overlooked. It is true that they are of less importance than what is being done in the Dardanelles, though in a way, of course, they are a natural corollary. For example, the capture of Constantinople is bound to turn Turkey into an Asiatic Power pure and simple; so that, in addition to its actual value as a great trade centre, Smyrna has a hypothetical value of considerable significance.

War is necessarily a matter of anticipating and allowing for contingencies. Since a siege and defence of Constantinople is out of the question because of the Allied Fleet, we may take it for granted that (unless prevented) the Turks will withdraw all their European troops to Asia Minor—a concentration not to be ignored.

From what we know of Turkish conceptions, or rather misconceptions, of sea power, it was ever in the chapter of



possibilities that an attempt would be made to collect transports at Smyrna with a view to operations against Egypt. With a view to protecting these, the fortifications were probably being improved. There was also always the possibility of an Austrian squadron managing to evade the French Fleet and get into Smyrna.

One way and another, therefore, it was necessary either to disable Smyrna or else to maintain a lengthy and considerable close blockade of the port.

From all of which it is abundantly clear that the bombardment of Smyrna comes into a totally different category to the bombardment of Scarborough and other of our East Coast towns. In the first case, we have definite operations as a definite and integral part of a definite scheme; in the other, mere aimless destruction in no way commensurate with the risk, probably not even worth the cost of the ammunition expended.

THE SUBMARINE BLOCKADE.

The most important event of the week is undoubtedly the destruction which has been wrought on hostile submarines by British destroyers. It is not impossible that the reported sinkings of submarines by merchant ships may be imaginary or partial successes. That is to say, there exists a possibility of sunken wreckage being occasionally taken for a submarine, also the further possibility that a submarine may be struck and merely damaged to the extent of her outer skin. To avoid being unduly optimistic we should consider these things, and perhaps discount by fifty per cent. in order to be certain of being on the right side.

Where destroyers are concerned, however, we have two recent tangible cases of organised destruction resulting in the loss of the boats and the capture of the crews. This last is certainly an application of the truth of the proverb that "a live dog is better than a dead lion," because the taking prisoners of crews is evidence which cannot be concealed or suppressed, and proof to the German people of weak points in that submarine blockade on which so much faith was pinned.

To us it is also satisfactory as indicating that we are learning the limitations of submarines, and acquiring practice in ways and means of destroying them. In this the ram seems easily the best weapon, as it was expected it would prove to be, since it is the *simplest*.

The problem of the crews has probably been best dealt with in the way in which the Admiralty has acted. To accord the "pirates" the ordinary treatment given to prisoners of war would have been manifestly incorrect. On the other hand, to hang them, though logical, would probably have defeated the object in view. It is necessary to remember in connection with this blockade that the German submarines are acting under definite orders from their own Admiralty. All the submarines have not carried these instructions out to the letter; some captains have been careful not to outrage the laws of humanity. To ascertain and differentiate during the war is necessarily difficult, if not impossible in many cases. The certainty of an ignominious death as the certain result of

capture would tend to drive all submarine officers to Ishmaelite tactics.

The British "reply" has now been definitely proclaimed. Whether it will have satisfactory results remains to be seen. There is ever a great deal to be said for the alternative policy of ignoring the blockade altogether. We all know the psychological advantage secured by the man who refuses to lose his temper in a quarrel or the fate of a boxer who "loses his hair."

To be sure we have not done that, and our proclamation is moderation itself. All the same, however, it will so be represented in Germany to the German public, and by German agencies to all neutral nations. It is along such lines that we may lose as much as we gain, correct though the "reply" *qua* reply may be and is.

THE HIGH SEAS.

On March 14 the German corsair *Dresden* (which escaped after the battle of the Falkland Islands) was caught by the *Kent* and *Glasgow* off the island of Juan Fernandez, and after a short five minutes' action hoisted the white flag. She was, of course, hopelessly outgunned, and it is little wonder that she sank soon afterwards.

The significance of the incident lies in the state of impotence to which, as a corsair, she had been reduced. Instead of destroying and harrying British trade, she was herself harried and in hiding.

There remains now only the *Karlsruhe*, also in hiding and also impotent. Two armed liners remain, but of these the *Prinz Eitel*, should she leave the harbour where she is now definitely located, is practically certain to be destroyed.

ANSWERS TO CORRESPONDENTS.

W. M. (Westmeath).—When Duckworth went through the Dardanelles he was fired at from holes drilled in the rock, which projected huge stones. This has given rise to the story of similar submerged torpedo-dischargers to-day. It is not very likely that any such exist—in any case, they could exist anywhere just as well as at the Narrows. Ten years ago the Germans installed, as part of their defences at Cuxhaven and elsewhere, huge submerged drums fitted with torpedo tubes.

A. F. R. (Montreal).—There are practically no "tactics" in modern naval warfare compared to the tactics of the old days. The German criticisms of British tactics do not count for much, and the alleged "bad manœuvring" of the North Sea action was due to the fact that Admiral Beatty refused to be dragged into a clever German trap.

C. S. P. (Wimbledon).—It is impossible to answer your question as submarines vary so, but in a rough sort of way you might give the destroyer half a minute if spotted, though it has, of course, a fair chance of not being spotted.

DUCKS AND DRAKES (Hythe).—The course of a torpedo is not to be deflected in the way you suggest. I believe that in the early days of torpedoes one or two provisional patents were taken out, but that they never came to anything.

E. H. G. M. (Devon).—The wavy gold lace band indicates Royal Naval Reserve. The white band indicates that he is in the pay department of that branch of the Service.

E. W. S. (London, W.C.).—The best known bomb-dropper is the Scott, invented by an officer of the U.S. Flying Corps. It was described and illustrated in *Aeronautics* some time ago. If you mail 65 cents to the Aeronautics Press Inc., 250, West 54th Street, New York, you will get the particular copy. Any of our aerial journals would also give you information galore.

J. L. (Glasgow).—No; quite impossible.

S. M. T. (York).—With reference to the Dardanelles, you have not taken into account my point of the immense fire-superiority of the ships of the Allies engaged. Ships (if stationary), armed as the forts were, would have been annihilated in seven minutes instead of seven hours!

G. McI. (Belfast).—The device you mention is a very old one.

T. L. B. (Windermere).—Your suggestion that, as English prisoners in Germany are apparently being badly underfed, exchanges should be made on the basis of *weight* instead of numbers, is certainly original! I doubt, however, whether the idea would find favour at Donington Hall!

BRUNE (Kilmarnock).—The original idea of the submarine was direct attack on the bottom of a ship from below, but it has long since been given up. It is not possible to see under water for more than a very short distance. That is why the submarine when submerged uses a periscope, and has become a practical instead of an impracticable weapon of war.

C. R. (Epsom).—I do not think your idea is very feasible. It has a certain attractiveness, but you have to remember that the average anti-aircraft gun is of small calibre.

W. T. (Canterbury).—Theoretically, of course, a projectile from a rifled gun should reach the target point up, but that this has never been regularly believed is evidenced by the fact that the turrets of most battleships are inclined at such an angle that the net result would be the receipt of a direct blow instead of an indirect one.

Some time ago a series of experiments were carried out in America with a view to settling the point, photographs being automatically taken as the projectile passed through a series of tissue paper screens. In this case the evidence was point downwards.

You will, of course, be familiar with the fact that the modern rifle bullet in leaving the muzzle has a distinct waggle for some two hundred yards or so before it settles down to its flight, though it was some little time before this was definitely discovered. In some similar kind of way it may be that the gyroscopical action of the projectile from a long modern high-velocity gun undergoes interferences.

Be all this as it may, there is not, or until recently was not, unanimity of opinion amongst gunnery experts.

Incidentally, at the Battle of the Yalu the old Japanese battleship *Fuso* was hit by a shell on the side. This shell went *upwards*, and, striking something, was deflected back, so that it actually came out through the same side of the ship some feet above where it had entered. This was at one time evidence for the striking point-upwards theory.

A. R. B. (Torquay).—Nothing is to be done with magnets.

A. P. B. (Windsor).—(1) Answered in the text. (2) I do not think there is any truth in the rumour that the Japanese Fleet is going to participate in the attack on the Dardanelles. For one thing, we have ample force without it. For another, the Japanese Fleet has still its own duties in the Pacific. (3) Any reply to this question would be censored.

A. J. R. (Rutherford).—The first cost of a submarine is a very variable quantity. According to the German Naval Estimates, they work out at about £6,000 each. Our own Estimates give little, if any, clue. The latest type could certainly be put at about £10,000, and probably more. Many thanks for your appreciative remarks.

S. G. (Isle of Mull).—Something similar is already in use.

(Several replies held over till next week.)

INFLUENCE OF AIR POWER.—I. AIRCRAFT AND CAVALRY.

By L. BLIN DESBLEDS.

WHEN Admiral Mahan wrote "The Influence of Sea Power Upon Modern History" he had, to guide him in his judgments and deductions, the minutely recorded events of centuries.

Probably a few generations hence another Mahan will prove the influence of air power on the production of a state of world politics which, to his readers, will be modern history. And although to us the influence of air power on generations to come, or in shaping the course of history, is still enshrouded by the mist of our limited knowledge, yet it is obvious that, side by side with the influence of sea power, so cogently made evident by Mahan, there is now another power, brought into being by the advent of aircraft, which is forcibly asserting itself.

The writer will not attempt to predict to what degree the war will be influenced by the work of air navies. There are not sufficient data on which to base any conclusion; but the information contained in the official reports already published by the War Office and the Admiralty is enough to indicate the character of the influence which air power has already exercised. From this it will be possible to make certain deductions of considerable value for the immediate future.

Not taking into consideration the number of combatants of the opposing armies now trying to force history into two different channels, there are two factors which, so far as the land operations are concerned, distinguish the present war from previous ones. These two factors are the employment, on a large scale, of railways and quick motor transport for strategic purposes, and the application of aircraft to the needs of war. To a certain degree, as will be seen, the influence of these two factors is interdependent. Aircraft affords a quick method of reconnaissance, and railways and motor vehicles a means of taking advantage of the results of those observations with as little delay as may be.

But it is important to note that the employment of aircraft for reconnaissance work has not diminished, and cannot diminish, the value of cavalry reconnaissance. In reality, it has made the cavalry of even greater worth than before.

This is due to the fact that aerial reconnaissance and cavalry reconnaissance are of two entirely different characters, and can be made to supplement each other. The former has already, in numerous instances, relieved the cavalry of certain duties and responsibilities which were placed upon it simply because, before the advent of aircraft, no other arm could undertake them. Certain tasks were assigned to the cavalry not because they could be perfectly accomplished by it but because those tasks would be less satisfactorily performed by any other arm. It was, for instance, part of the cavalry's work to be sent out, unsupported, to very great distances from the main force, in order to gather, at random, and in all directions, information concerning the enemy which might prove of strategic value. The cavalry had, for this reason, very often to undergo a strain quite out of proportion to the results achieved, and which wasted much of its strength and resources. By relieving the cavalry of at least a considerable portion of long-distance and random reconnaissance, the advent of aircraft has greatly diminished the strain to which it was hitherto subjected.

Unless prevented by a superior force of aircraft, an air squadron, or even a single machine, can carry out in clear weather long-distance reconnaissance with very satisfactory results. This work can be accomplished by the airman much more quickly and with much less strain than is possible to the cavalry. Since the beginning of hostilities it has, therefore, been possible, by the employment of aircraft, for the Commander-in-Chief to save his cavalry much fruitless marching, and, possibly, much fighting, for the same amount of information which his airmen obtained with ease. The full significance of this fact must not be overlooked. Unprovided or insufficiently provided with aircraft and reliable aerial observers, an army, forced to depend entirely, or almost entirely, upon its cavalry for strategical reconnaissance during the period preceding a battle, would, when the opposing armies began to close, have its cavalry so tired and scattered that their useful employment at a critical moment in the battle might be seriously hampered.

There are, however, many details of reconnaissance which

can only be obtained by the cavalry. For instance, it may not be possible for aerial observers to distinguish, from a great height, between friendly and enemy troops. In such a case, when once the position of the troops has been located by the airman, the cavalry could, if necessary, be sent out to determine the point. The cavalry would then only be ascertaining the correctness of a specific observation, and would not be using up its strength on, possibly, an uncertain mission.

There are also other points connected with reconnaissance which are altogether beyond the capacity of aerial observation. The airman cannot, for instance, discover the morale of the enemy on the ground. Nor can he find out their physical condition. An air fleet cannot keep in touch day and night with any particular unit of the enemy. These are some of the reasons why the use of aircraft does not diminish the value of the cavalry for reconnaissance. Again, there is the possibility of bad weather rendering an aerial reconnaissance out of the question, or the case where the enemy is under cover in a wood.

From the preceding lines it will be gathered that the co-operation of aircraft with cavalry henceforth gives to a Commander-in-Chief a means of carrying out reconnaissance which his predecessors did not possess. Therefore, Napoleon's *dictum* that "an army is nothing except for its head" has at the present time an even greater force and significance than a century ago, for the "head," by the judicious combination of aerial and cavalry scouting, now possesses better "eyes."

There is a point connected with aerial scouting which it is important always to keep in mind. It is that the Commander-in-Chief must have an exact estimation of the temperament and training of his air scouts, for on these con-

ditions must depend the degree of reliance to be placed on their observations, carried out at times under difficult circumstances. It may be that there is a greater degree of understanding between British airmen and their commanders than there is between those of the enemy, and this possibly has contributed to the ascendancy our airmen have gained. If such be really the case, it would follow that, as far as possible, the same air reconnaissance squadron and cavalry force should always be employed to co-operate with each other so as to ensure the best results from such co-operation.

Another consideration of importance in connection with the use of aircraft for reconnaissance duty is that the commander must always have a sufficient number of machines in readiness to start at a moment's notice. There must also be an ample number of trained aerial observers in order that too great a continuous drain should not be placed upon a small force. It is only with a large air fleet that a commander in the present war can derive the full advantage of the co-operation of his aircraft and cavalry.

In concluding this chapter on the Influence of Air Power, the writer cannot do better than quote the following lines from Sir John French's despatch, dated November 20, 1914: "The work performed by the Royal Flying Corps has continued to prove of the utmost value to the success of the operations. I do not consider it advisable in this despatch to go into any detail as regards the duties assigned to the Corps and the nature of their work, but almost every day new methods for employing them, both strategically and tactically, are discovered and put into practice. The development of their use and employment has, indeed, been quite extraordinary, and I feel sure that no effort should be spared to increase their numbers and perfect their equipment and efficiency."

CORRESPONDENCE.

SOLDIERS' AND SAILORS' TOBACCO FUND.

To the Editor of LAND AND WATER.

DEAR SIR,—As I know your valuable paper is extensively read both by naval and military officers on active service, I should be extremely glad if you would allow me space to ask any Commanding Officer who is short of tobacco for his troops at the Front to communicate with me, and my committee will be pleased, as far as lies in their power, to forward a supply.

I will take this opportunity also to thank those of your readers who have so kindly and promptly contributed towards the needs of the wounded at the St. Malo Hospitals. £25 worth of tobacco and pipes have already been despatched.—Yours faithfully,

W. EVAN COLLISON, Hon. Secretary.

Central House, Kingsway, W.C.

QUEEN ALEXANDRA'S FIELD FORCE FUND.

To the Editor of LAND AND WATER.

SIR,—Your generous support of the good work being carried on by this fund prompts me to write that a suggestion for its augmentation has been submitted by the present writer, in high quarters, by a proposal to hold a Wellington and Waterloo Loan Collection of pictures, trophies, etc., in London during this centenary year of the great battle, in aid of this fund.

The exhibition might also well include portraits, etc., of Napoleon and his generals, and any other available work (of which there are a large number in this country), which would materially add to the interest of the collection.

At Apsley House alone there is a wealth of souvenirs, including the great marble figure of Napoleon by Canova—totally unknown to vast numbers of our own people in the present generation, and to our many visitors in the metropolis from the countries of our Allies and our Colonies.

A suitable location at Kensington or elsewhere can readily be found for the exhibition, and the fund in which Her Majesty Queen Alexandra is taking so great an interest, and to which she has graciously lent the advantage of her name, would, without doubt, substantially benefit during the coming months.

I am, Sir, your obedient servant,

J. LANDFEAR LUCAS.

Spectacle Makers' Company.

Glendora, Hindhead, Surrey.

ANTI-SUBMARINE TACTICS.

To the Editor of LAND AND WATER.

SIR,—In your issue of March 6 your correspondent Lord Dunleath submits proposals in this connection which are

certainly deserving of earnest consideration. Some months ago I approached the authorities with very similar proposals, but the submarine menace had not then become so acute. Possibly a comparison of my suggestions with those of your correspondent may be of interest to your readers.

It should be noted that I approach the subject from the standpoint of a naval architect, with many years' practical experience in the design and construction of vessels of various types. It is unquestionable that for submarine chasing a special type must be evolved.

My conclusions as to the principal points which should be embodied in the design of a submarine chaser are, however, somewhat different from those suggested by your previous correspondent.

(1) *Speed*.—This must be at least twice as great as the surface speed of the fastest submarine likely to be encountered. Quick response to the helm is, of course, of the utmost importance, combined with ability to pivot quickly, like a "fly on a pin," as I have heard it expressed.

(2) *Ramming*.—This should have no place in the proposed tactics, and should, therefore, not be taken account of in the design. For destroyers such ramming tactics are quite feasible, but not for the light fast craft I advocate. Besides, shallow draft is, in my opinion, of the utmost importance, and this is not compatible with ramming tactics, unless the submarine is caught in the surface condition, when gun fire would much more certainly destroy it.

Armament.—One Q.F. gun on a circular, all-round pedestal, say, on top of a conning tower, with some form of launchable spar torpedo in the bow, and a couple of large calibre machine-guns are sufficient. A single torpedo-tube carried on an all-round racer aft might be useful in emergency against enemy vessels, thus increasing the scope of the type, but it is possibly a mistake to depart from the primary purpose of submarine chasing.

Invisibility.—Low freeboard compatible with speed and seaworthiness is, of course, important, but high speed in the vessel I propose and sea-keeping qualities absolutely compel a high forecastle; wireless telegraphy calls for some form of mast; and high power for a very substantial funnel or funnels. It should be possible, however, to so arrange the profile of the vessel as to very materially improve the invisibility as compared with, say, a modern destroyer.

Let us now consider the practical design of a vessel embodying these characteristics; keeping in view the supreme importance in the present case of rapidity of construction and simplicity of handling, without which all our suggestions are quite useless, since shipyards are overcrowded with work, and highly-trained crews are needed in many other directions.

I should take as my model a cross between a reduced

torpedo-boat destroyer and the *Turbinia*, with possibly also some effort to work in a hydroplane after-body.

I should give the full body, with its high fore-castle and flaming bow lines, very much the form of the latest destroyers, keeping draft at lowest possible limits, and rounding-up the keel from midships to stern. The full beam would be carried very far aft on the load-line, very much as in the case of the *Turbinia* already referred to. Perhaps an enlarged *Maple Leaf* would best represent the type advocated.

Such a vessel at moderate speeds up to twenty knots would travel very easily with moderate change of trim, but at speeds of thirty knots or thereby "squatting" would occur to a considerable extent, a tendency which might be utilised to advantage in quiet waters to obtain a hydroplane effect, very conducive to quick handling on the rudder.

Roughly speaking, such a vessel could be worked out on a length of 200ft., a displacement not exceeding 350 tons, and a draft of 7ft. at normal trim. Twin-screw turbines and two express boilers, oil-fired, would be fitted to develop five to six thousand s.h.p.

A word as to the tactics to be used with such vessels. Flotillas of eight or ten would be based on each large shipping district or naval base—e.g., Thames, Forth, Mersey, Tyne, Bristol Channel, and so forth—with special enlarged flotillas for strategical points, such as Dover Straits, Mull of Cantyre, St. George's Channel, &c., &c. Ships making port or approaching danger zones would be shadowed by one or more of these special craft rapidly varying their positions relative to the vessel shadowed by alternating periods of slow with sudden bursts of high speed, than which there would be nothing more disconcerting to the submarine. It is not too much to claim that no submarine would think of wasting torpedoes in attacking a vessel so protected, nor would it be safe for a submarine to even show its periscope in such a neighbourhood. Flotillas of these vessels would also employ "scatter" tactics in waters where a submarine has been located. It is at present impossible to locate a submarine's course after it has once dived, but a number of fast vessels can from a given point "scatter" over the points of the compass and with fair prospect of locating the submarine again at its next effort in surface observation.

Unfortunately, such a programme as I have outlined requires the building of at least a hundred new vessels of this special type. Frankly, this is quite out of the question at present; at least, in this country. All our available ship-building resources must be utilised to provide the units for immediate necessities, such as cruisers, torpedo-boat destroyers, submarines, and other types which the Censor might not like to have enumerated. It might be possible to get round this difficulty, but here again publication is inadmissible.

In my opinion, some of us ought to help the authorities by building and experimenting with some such craft as I have outlined, giving special attention to simplicity of construction and standardisation of parts for rapid reproduction in batches. One thing may be definitely stated, and that is that the mere design of a thoroughly practical anti-submarine craft presents no difficulty at all. To provide a hundred such for early delivery is quite another matter.

J. R.

WASTAGE.

To the Editor of LAND AND WATER.

SIR,—Seldom indeed can it be said that Mr. Belloc does not make his meaning abundantly clear. But his criticism in your last issue of the military writer's figures is difficult to follow.

Mr. Belloc has told us that the total German casualties are forty per cent. of their whole force in the field, which he puts down at 6,000,000. This, it will be noticed, would give 2,400,000 casualties in all.

On the other hand, he estimated last month the *permanent* losses of Germany alone at 1,250,000 (to be doubled if Austria is included). This fairly corresponds with the larger figure given later by the military writer.

If, then, Mr. Belloc's 2,500,000 refers to *permanent* losses only, is he now including those of the Austrian Army as well? If not, is he estimating the *total* list of casualties, and not (like the military writer) the *permanent* losses only?

Yours faithfully,

Shrewsbury.

A. L. O.

MILITARY HONOURS.

To the Editor of LAND AND WATER.

DEAR SIR,—Your military correspondent may be able to explain to those who, like myself, are not conversant with

things warlike the following approximate figures based on the recent list of Military Honours:

Percentage of Honours awarded to Regimental Officers in the Field.....	5 p.o.
Percentage of Honours awarded to Staff Officers in the Field.....	35 p.o.
Casualties among Regimental Officers.....	30 p.o.
Casualties among the Staff.....	5 p.o.

It would seem from above almost as easy for a Regimental Officer to acquire a place in the "Roll of Honour" as for a Staff Officer to appear in the "List of Honours."

While at the same time the Regimental Officer runs six times as much chance of being knocked out, with one-seventh the chance of being noticed.—Yours truly,

CIVILIAN.

March 2, 1915.

ARTICLE ON SUBMARINES.

To the Editor of LAND AND WATER.

SIR,—Now that submarines are so much before the public would it not be useful if your paper, which has so many interesting articles in it, was to get some naval expert who can write intelligibly to give us an article on submarines? The public know very little about their strong and weak points or really what their capabilities are or how they can be best attacked or guarded against. I would suggest the following points would be of interest:

- (1) How long can they stay under water, and how do they stay beneath the surface?
- (2) How long does it take them to sink or rise?
- (3) What rate do they travel as a rule above and below the surface?
- (4) What is the smallest rifle, gun, bullet, or shell which will pierce them?
- (5) How long can they keep the sea without replenishing their stores?
- (6) What is their armament besides torpedoes?
- (7) How do men-of-war and torpedo-boats attack and defend themselves against submarines?

—Yours truly,

P. C. S. PAYNE,
2nd Lieut. Beds. Yeomanry.

13, High Street, Olney, Bucks.

LA MÉDAILLE MILITAIRE.

To the Editor of LAND AND WATER.

DEAR SIR,—I should be much obliged if you could give me the following information through your paper, with regard to the French decoration "La Médaille Militaire":

- (1) How many classes are there?
- (2) What class are the W.O., N.C.O., and men to receive whose names appeared in Army Orders under date November 5, 1914?
- (3) What colour is the ribbon?
- (4) Is the ribbon colour the same for all classes?

Waverley Hotel, Bournemouth.

X.

MISSING.

To the Editor of LAND AND WATER.

SIR,—We see daily in the newspapers reports from our front that "a section of our trenches have been lost or recaptured," and that besides the "killed and wounded" many hundreds of our men are "missing." It seems hardly possible that a section of a trench can contain so many. An explanation of this—to me and others a puzzle—as to where the missing come from, and where they go to, and how they get there, might quiet our doubts.—Your obedient servant,

Y.

Tangier and Constitutional Clubs.

MR. HILAIRE BELLOC'S LECTURES ON THE WAR.

Newcastle.....	Town Hall.....	Friday.....	19 March, 3 and 8.30.
Glasgow.....	St. Andrew's Hall.....	Monday.....	22 March, 8.15 p.m.
Edinburgh.....	Usher Hall.....	Tuesday.....	23 March, 8 p.m.
Manchester.....	Free Trade Hall.....	Wednesday.....	24 March, 8.30 p.m.
Southport.....	Cambridge Hall.....	Thursday.....	25 March, 8 p.m.

Seats may now be booked for the next series of Lectures at Queen's Hall; these are to be given on the first Wednesday in April, May, and June.

MR. JANE'S LECTURES ON THE NAVAL WAR.

Bournemouth....	Pavilion.....	Friday.....	19 March, 3 p.m.
Guildford.....	Borough Hall.....	Saturday.....	20 March, 3 p.m.
Hove.....	Town Hall.....	Tuesday.....	23 March, 3 p.m.
Bath.....	Assembly Rooms..	Thursday.....	25 March, 3 p.m.
Malvern.....	Assembly Rooms..	Friday.....	26 March, 3 p.m.
Shrewsbury.....	Assembly Rooms..	Saturday.....	27 March, 3 p.m.

Mr. Walter Leaf, D.Litt., will lecture on "The Dardanelles" at the Aeolian Hall on Friday, March 26th, at 8 p.m. Tickets, price 7s. 6d., 5s., 2s. 6d., and 1s., can be obtained from Miss P. Strachey, 58, Victoria Street, S.W.

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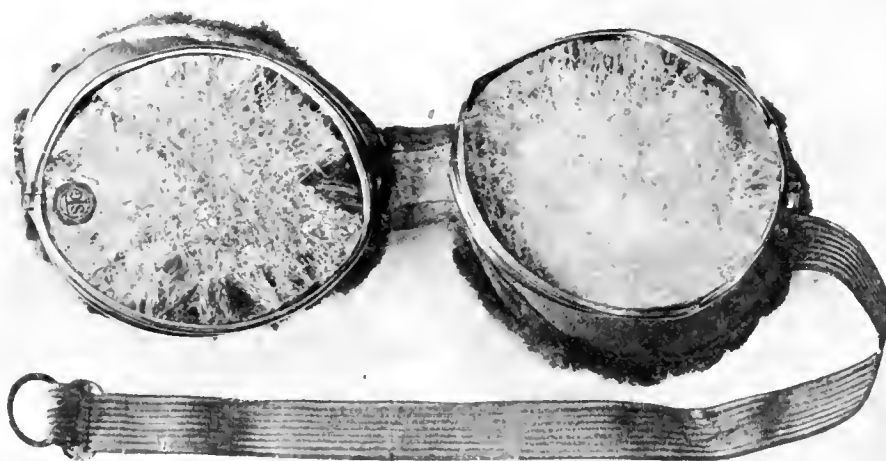
By ATHERTON FLEMING

IN my last week's article I endeavoured, to the best of my ability, to impress upon the readers of this journal the absolute necessity for an adequate supply of motor ambulances at the front. *We cannot have too many.* We cannot take the risk of having

too few. It is the privilege of those who cannot, for many reasons take their share of the actual fighting to help in every way possible those who can, and surely there is no better way to do so than to send a properly equipped motor ambulance to take the place of one which has already done its work and is getting rather "crocked." Now is the time when many of those ambulances which have been doing yeoman work for the past few months are beginning to feel the strain and they will have to be replaced at once, or our wounded

must suffer. It is the intention of the proprietors of this journal to open a subscription list with the idea of replacing one, at any rate—more than one if funds will allow. In order to do this the sum of £500 is needed. The cause is a good one. The sum required

is not large, and I am sure the readers of LAND AND WATER are sufficiently generous to enable the scheme to be carried through successfully. No subscription will be too small; the modest sum of one shilling from each reader would be sufficient to supply a fleet of ambulances. One ambulance only is asked for, for the initial effort. Please help to the best of your ability. Full particulars of the scheme will be given in our next



A RELIC FROM THE FRONT

Pathetic interest attaches to the above picture:—The goggles, which are of "Triplex" glass, were recovered from the wreck of an aeroplane which fell nose first and buried its engine some 2 ft. in the frozen ground. The unfortunate pilot's face was completely wrecked by the instrument board, but, as will be seen, the glass of the goggles which were still in position was found in the condition shown in the illustration. It stands to reason that had the pilot been wearing ordinary glass goggles and escaped with his life he would most probably have been blinded.

issue, and the subscription list will then be opened.

ENGINE "LAZINESS"

WHETHER the car be a four-cylinder, high-powered one or merely a 5 h.p. single-cylinder, it is equally liable to the indisposition known as loss of power—a form of laziness, if you choose to call it so, but one for which there is always a cause; and this, if diagnosed, can be treated, and, what is more, cured. The causes which bring loss of power can be considered under three headings: (1) poor compression; (2) poor ignition; and (3) poor water circulation.

Poor compression may be due to leakage at either the inlet or exhaust valves, sparking plug, compression chamber (if it be a detachable one), or the piston rings. If a little soap or oil is placed round a suspected joint and the engine started up, escape of bubbles will reveal the position of the leak, and when found it can be remedied. If a sparking plug porcelain is broken a new plug is necessary; if the inlet valve or plug joint "blows" a new washer is required. Copper and asbestos ones are now made of all sizes and shapes, but, failing a suitable one, a grommet of asbestos cord rubbed up with a little red lead will always make a gas-tight joint. Inspection will reveal if the valves are true; if not, and they are pitted, they require grinding, so that the valve fits on its seat perfectly. This can be proved by taking out the valve and marking the seat in a few places with chalk, then replace the valve and press it well home. Move it round with a screw-driver, then lift it out, and if the fit is correct it will at once be seen. Gumming of the piston rings may be a cause of their not holding the compression. Pulling the engine round after injecting a little paraffin through the compression cocks is the treatment. Scoring of the cylinder or worn piston rings are the last and, I believe, least frequent causes in this class. Treatment will depend on the extent of the damage; new piston rings may be needed, or if the liner is badly scored it may need relapping, and, if much is so removed, a new piston, as well as rings. With proper lubrication, however, a car should run for three or four years on the set of rings, and the cylinder should not require lapping in double that time; but this all depends on proper and sufficient oiling.

Poor ignition may be due to the plug, coil, accumulators or contacts. If the plug is sooted it should be taken out and cleaned or a new one put in. If the platinum points on the coil trembler have worn irregularly remove the screw and trembler blade, and with a very fine file dress them so that they are square with one another; then replace, and, with the contact-maker at contact, adjust the trembler to give a good "buzz." If the accumulators are run down get them recharged, and if away from home borrow a fresh set. If none can be obtained it may be possible to get home by adjusting the sparking plug points a little nearer to one another. The usual place where contact trouble occurs is at the contact-maker; the fibre wheel may be worn out of truth with the wipe, or the latter may itself be irregularly worn. A new wipe can be fitted or the old one can be filed true. If the fibre ring is much worn it will need spinning in the lathe, but on the road the wipe can be usually adjusted so as to get the engine to take one home with a good pull. Often the spring that keeps the wipe in contact merely wants bending or pulling out so as to cause it to press more firmly against the ring. Mud or oil on this part is a frequent cause of stoppage, but occasional cleansing will prevent this. Loose terminals or partly-broken wires, too, may be the cause of poor ignition, also imperfect insulation of the leads. The latter at the accumulators often corrode; after attaching them it is well to smear on a little grease, which will prevent the acid, which often slightly escapes, from attacking them. All exposed wires should also be well insulated. I believe in putting them through rubber tubing and then lead gas piping, and using tinned copper wire covered with vulcanised rubber. This may be dearer, but it obviates all possibility of a "short."

If the water circulation is imperfect the engine will heat, the cylinder oil may then burn, and the rings, among other possibilities, not hold compression; in addition, the cylinder will be so hot and the gas will expand so much that a full charge cannot enter, and what does, as a result of the excessive heat, will explode prior to full compression, so it is as well to see to the pump and also that the water tank contains water.

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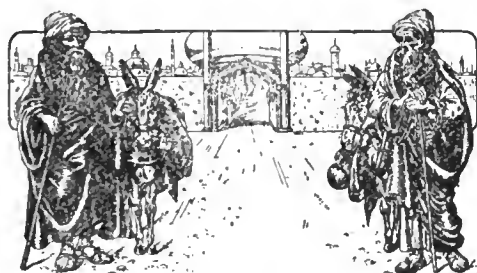
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CHAPTER THE FIRST.

TWO merchants of the East met at the gate of the city, each with his ass well-laden as if for a long journey. "Whither goest thou, friend?" asked the one. "Dost thou perchance also journey to Damascus?" "Even so," replied the other, "and if thou be willing, we will journey on our road together, for these be perilous times and the way is hard."

"Yea, verily, thou art right, friend; hard for man and beast. Hast thou seen to it that thine ass is well-shod?" "Of a surety, good friend, and shoes have I to spare should aught befall." Whereon the other smiled in his beard, but answered not, and they went on their way, the one with the other.

(To be continued.)

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LAND & WATER

Vol LXIV

No. 2759

SATURDAY, MARCH 27, 1915

[PUBLISHED AS
A NEWSPAPER.]

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THROUGH THE EYES OF A WOMAN

By MRS. ERIC DE RIDDER

Dress v. Clothes

"DRESS!" said the Mere Male in a superior way. "How can you possibly think of dress at such a time as this?"

"But I am not exactly thinking of dress," I answered, looking up meekly from the pile of patterns and designs my dressmaker had just sent me. "I am thinking of clothes—a very different thing."

"That's mere feminine prevarication," said the Mere Male, who is a lover of long words.

"No, my good man, it's not," said I. "Far from it. It is a case of sheer necessity. I, like most other women and like the lady in the song, 'have nothing to wear.' We have got to buy some clothes, or we shall have to remain indoors, clothed like squaws in blankets."

"So I suppose in a short time," said the Mere Male, with an ever-ready wit, "I shall have the pleasure of seeing you in a wide skirt, a coat like a badly cut mess jacket, and a pill-box hat."

"To say nothing of boots twelve inches high," I put in, not to be outdone in this flight of fashionable fancy.

The Mere Male grunted; there is no other word for the sound he made.

"What did you say?" I asked.

"I didn't speak," said the Mere Male in a tone which spoke volumes.

"Then I will," said I, now thoroughly aroused. "It isn't because we women are thinking of dress and nothing but dress that we are buying clothes; we are buying them because we really need them, in the first place, and because we have some regard for the dressmakers, in the second."

"From altruistic motives," said my friend, with his horrid habit of using words of three syllables and over, and with more than a tinge of sarcasm.

"You can call them what you like," I retorted, "but the fact remains that the present spurt in clothes buying is spelling salvation to the dressmakers. It means money for heaps of little workroom girls over here, to say nothing of the minnettes in Paris."

"So you women are in the right, as usual," said the Mere Male, only half convinced, but well on the road to conviction, nevertheless.

"Exactly," I said.

"And you have had the last word, as usual!"

"Precisely," said I.

The Helping Hand

As a matter of fact, the Mere Male, even is his most argumentative mood, is a helpful being. He enabled me to see in a flash what this revival of industry must mean to the dressmaking houses. It must have lifted from many the threat of impending ruin; it must have relieved scores of minds, from the brilliant directors of famous establishments to the humblest worker in the smallest workroom. It is, of course, no use pretending it is charity pure and simple that is leading us all to the fitting-room. It is nothing of the kind. Our needs for new garments are too many and obvious to allow of any such philanthropic gloss. The only

thing is that by replenishing our wardrobes we are keeping many in employment who were in danger of seeing their means of livelihood vanish away. We are doing a kindness to others as well as ourselves as we order our new spring clothes. And, all other considerations set aside, why should we go about in dismal dowdiness. Things are gloomy enough without us making them more so by appearing in metaphorical dust and ashes. I hold no brief for reckless extravagance in

clothes. At this time it would seem to most of us worse than criminal. There is, however, such a thing as the happy medium. It is easy to talk about—not so easy to find. In this particular case it can soon be defined; midway it lies, exactly between needless expense and undue economy. A point for nice discrimination in very truth, but invaluable when once we have finally arrived at it.

The Market Gardeners

A letter has just reached me from the Riviera. It is written by a fortunate mortal at St. Jean, Cap Ferrat, that fascinating spot within short distance of Nice. The average visitor to the Riviera knows little of St. Jean, but the few who do recognise it as one of the beauty spots of the earth. The part of St. Jean which is not sea—if such an Irish statement may be permitted—is one big flower-garden. The mimosa is beginning to fade, but heaps of lovely things have arrived to take its place. Festoons of ivy-leaf geranium, clusters of roses, sweet-smelling stock, bed after bed of carnations, white, rose and pink sweet peas now on the verge of flowering—the list is well-nigh inexhaustible. St. Jean, in common with all the neighbouring district, contributes to the Nice flower-market; but the demand for their fragrant

treasures does not cease here. Great baskets, hampers, and boxes of flowers are being forwarded regularly to Paris and London. And this not only in spite of the war, but in spite of the fact that every able-bodied Frenchman has either joined the colours or is working on Army supplies. Last year numbers of men were working in the flower-fields; this year the women are doing all the work concerned with them. My letter tells me that there is not a single man working in the gardens surrounding the villa in which it is written, save one who is over seventy. The gardeners have gone, their wives are working in their stead, and the work—hard though it often is—is being carried out just the same in their absence.



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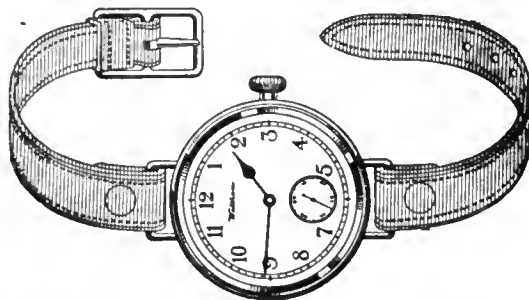
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THE WAR BY LAND.

By HILAIRE BELLOC.

NOTE.—This Article has been submitted to the Press Bureau, which does not object to the publication as censored, and takes no responsibility for the correctness of the statements.

In accordance with the requirements of the Press Bureau, the positions of troops on Plans illustrating this Article must only be regarded as approximate, and no definite strength at any point is indicated.

THE POSITION ON THE EAST PRUSSIAN FRONTIER.

I.

THE capture of Warsaw, with its railway bridges, is, as has been the theme of these articles for many weeks past, the capital operation of the enemy in the present phase of the War.

If he can obtain possession of that point, he guarantees himself in the East against a Russian advance for some time to come, and is free to mass in the West before the munitioning and new equipped armies of the Allies in the West imperil his line through Northern France.

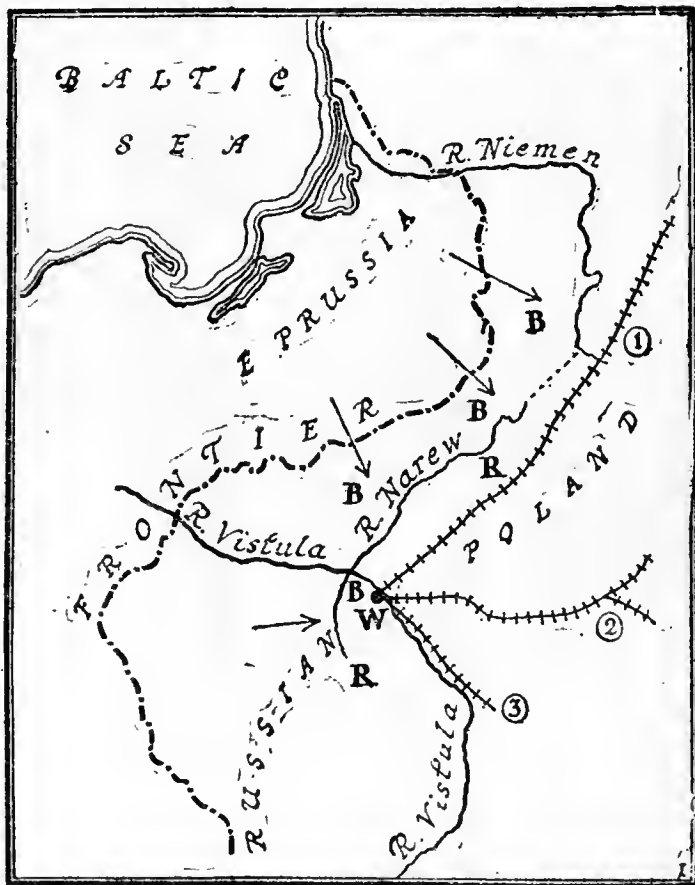
The fortunes, therefore, of the campaign for Warsaw must be grasped as a whole if we are to understand the present phase of the War, and I propose to take the opportunity of the present lull and indecision in this quarter to recapitulate the operations there and to lead them up to as precise a description as our scanty views permit of the situation at the moment of writing.

It will be remembered that the Germans, after having failed to take Warsaw by direct attack from in front along the Bzura and the Rawka (which attempt had lasted nearly two months, and had cost them in total casualties perhaps two hundred thousand men) determined with the beginning of February to attempt the capture of the city from behind. Their plan was to come down from the North to cut the fortified line of the Niemen and the Narew and so to get a-straddle of the sheaf of railways that converge upon the bridges of Warsaw across the Vistula.

This is the fundamental point of the Eastern Campaign in its present phase. I have described it more than once in these pages during the last six weeks. I take the liberty of repeating it again this week because a clear comprehension of it is essential to the comprehension of the present position.

The position, then, at the opening of February was that on the accompanying sketch map. The enemy having failed, after prolonged efforts, to capture Warsaw at W by a direct attack along the line B R (which is the line of the Bzura and the Rawka) from the direction A, gathered certainly more than ten, and possibly fourteen, Army Corps in East Prussia—that is, anything from 400,000 to nearly 600,000 men—and designed to come down in the directions BB B and get a-straddle of the railways 1, 2, and 3 which converge upon the bridges of Warsaw and by which alone a Russian Army, working westward of the River Vistula, can live. In front of those railways stretch like a screen the fortified lines of the Narew River, prolonged by the fortified lines of the Niemen River. The enemy's design was to push out from East Prussia and break that line.

During the first week of February he delivered a very violent attack upon the Bzura Rawka line which lasted from February 2 to February 8. We



can now see that his probable main object in doing this was to distract attention from the concentration of his troops in East Prussia, though, at the same time, we must remark that his effort was sufficiently violent to warrant some hope of his breaking through in this last attempt. At any rate, with February 8 and 9 his advance with the large forces concentrated in East Prussia began.

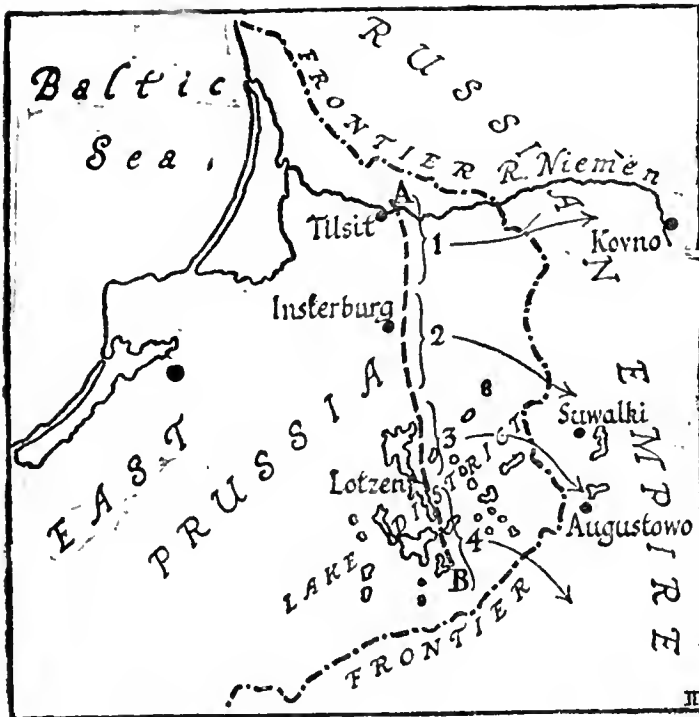
He had immediately opposed to him nothing but the Tenth Russian Army, a force of no more than four Army Corps, amounting, after several months of fighting, to perhaps not more than from 120,000 to 140,000 men, even allowing for the drafts by which they had been replenished.

Such a force is, for a campaign of the present dimensions, a weak one. It does not represent more than a fifteenth perhaps of the total Russian forces operating between the Baltic and the Roumanian frontier.

This tenth Russian Army was either taken by surprise or at any rate compelled to a very rapid retreat before this greatly superior concentration of the enemy, and its retirement took up the whole of the second week and extended into the third week of February.

When the German forces struck it, in an immediate superiority of at least five to two, and, counting the German forces behind the first line in a superiority of quite three to one, the situation of this tenth Russian Army was that set out in the next map.

It had slowly fought its way over the East Prussian Frontier, going partly north of the lake



district and partly engaging itself in that district until it had come to occupy the line A B; its right wing was within half a march of the East Prussian town of Tilsit, its extreme left was a couple of marches south of the town of Lotzen. It had not quite penetrated either to Insterburg nor, I think, to Lotzen itself, and it must be regarded as a chain of four forces, each an Army Corps, which I have numbered in the accompanying sketch 1 to 4. These four Army Corps retired very rapidly before the advance of their vastly superior enemy along the arrows marked upon the sketch towards Kovno, towards Suwalki, towards Augustowo, and further to the south. During this retreat they suffered no more than the losses normal to a perilous operation of this kind, say ten or twelve per cent., in men and material, save in the case of one Army Corps (the Twentieth Russian Army Corps), which, either because it deliberately remained behind to act as rear-guard, or because it was so handled that it got out of touch with the forces to the north and to the south of it, suffered envelopment, and was almost wiped out as a fighting force.

This disaster occurred in the marshy forest district surrounding the town of Augustowo, and the success (though but local and partial in a campaign of such dimensions) was a heavy score for the enemy.

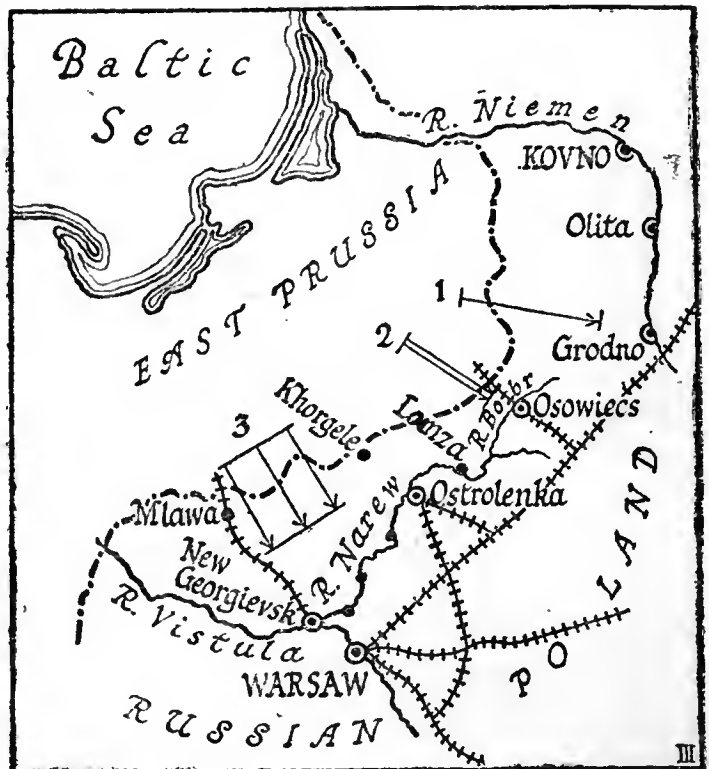
The enemy exaggerated it, naturally, and told us that the Tenth Army as a whole had been destroyed. This was, of course, not the case; but it had lost through normal casualties and through this particular disaster quite a third of its men by the time the first chapter in the great movement was closed, which we may fix roughly at the end of the third week of February—say, Saturday, February 20.

In this first shock the newly-concentrated German forces had everywhere crossed the frontier of East Prussia, and had, along the whole crescent of their advance, penetrated into Russian territory.

With the last week of February, from February 21 to February 28, inclusive, opened the *second* chapter, and to understand this we must have recourse to a third sketch.

The object of the enemy being, not the purely

sentimental one of clearing German soil of the invader, but the practical one of cutting the railways behind Warsaw (if he did not succeed in achieving which task his movement would have failed), he proceeded to advance upon those railways in three main bodies, which I have marked in the accompanying sketch 1, 2, and 3 respectively.



The first and smallest body was directed against the neighbourhood of Grodno. The second was directed against the fortress of Osowiec, the third was directed upon a broad front towards the lower Narew, and the reason of this disposition was as follows:

It is obvious that the effort to cut the railways behind Warsaw would be successful and rapid in proportion to the closeness to Warsaw at which the advancing force managed to strike home.

A success by column 1 would be of little use if column 2 were held up and column 3 were defeated.

For column 1, supposing even that it could get past Grodno and cut the railway behind that fortress, would have a very long way to go before it would get at the next of the railways which spread out divergently eastward from Warsaw; and coming up so very far behind that city would have but little effect upon its fate.

But if column 3 could manage to force the defensive line and get upon the railways immediately in the neighbourhood of Warsaw, where they all come close together, and where the cutting of the first would be rapidly followed by the cutting of the second and third—and that so near to the city that this success would immediately isolate it—then the object of the great German move would be decisively accomplished.

Further, a blow thus struck in the neighbourhood of Warsaw would divide in two the main Russian forces in the North; it would leave the great army in Warsaw in front of it and to the west isolated from the bodies that had retired upon Osowiec and upon the upper Narew.

Nevertheless, it was necessary for column 1 and for column 2 to be operating as they did, both because their action would occupy the Russian forces in the North and prevent their coming down South to the relief of the neighbourhood of

Warsaw, and secondly because the cutting of the railway even high up would prevent the arrival of reinforcements from the North down on to the threatened district near the Vistula.

We have then this second chapter of the great movement opening with the advance of the three German bodies upon the whole line of the Niemen and the Narew with the object of piercing that line, and particularly with the object of piercing it in great force at its Southern end between the two fortresses of Ostrolenka and New Georgievsk.

The fortified line of the Niemen and the Narew consists in the following elements.

It starts with the fortress of Kovno upon the broad and considerable obstacle of the lower Niemen and runs up that river to the corresponding fortress of Grodno about eighty miles away. Between the two is the minor fortified point of Olita. At Grodno there is a great bend in the River Niemen, the upper reaches of which come in from the East, so that the line of the river is no longer useful as part of the screen to defend the sheaf of railways that converge on Warsaw. Indeed, the main line from Warsaw to Petrograd cuts the Niemen at this bend.



But a natural obstacle suitable to the prolongation of a defensive line or screen is discovered in the neighbourhood of Grodno in the shape of the small sluggish river called the Bobr. This stream oozes through great belts of marsh which are crossed by only one causeway and railway, and at the point of this crossing the little town of Osowiec has been fortified. Some twenty odd miles below Osowiec the Bobr falls into the Narew, which river takes on from that point the task of the defensive screen. There is a small fortified point early in this continuation at Lomza, a more important one at Ostrolenka lower down, and below Ostrolenka a fortified point at Rozan, then a more important one at Pultusk. A short day's march south of Pultusk, at Serock, the

Narew falls into the River Bug, which almost immediately afterwards falls itself into the Vistula, at the highly important great modern fortress of New Georgievsk, whence a railway leads to Warsaw on the one hand and up to the Prussian frontier at Mlawa on the other.

The whole of this line, in a chord drawn from one extremity to the other, is just over two hundred miles long. In all its twists and turnings it is considerably over two hundred and forty. And it was the business of the enemy to get through this fortified screen, and that without too much delay, if he desired to take Warsaw before the melting of the ice in the White Sea or the possible forcing of the Dardanelles should permit the further munitioning of Russia and before the new armies appeared in the West from England.

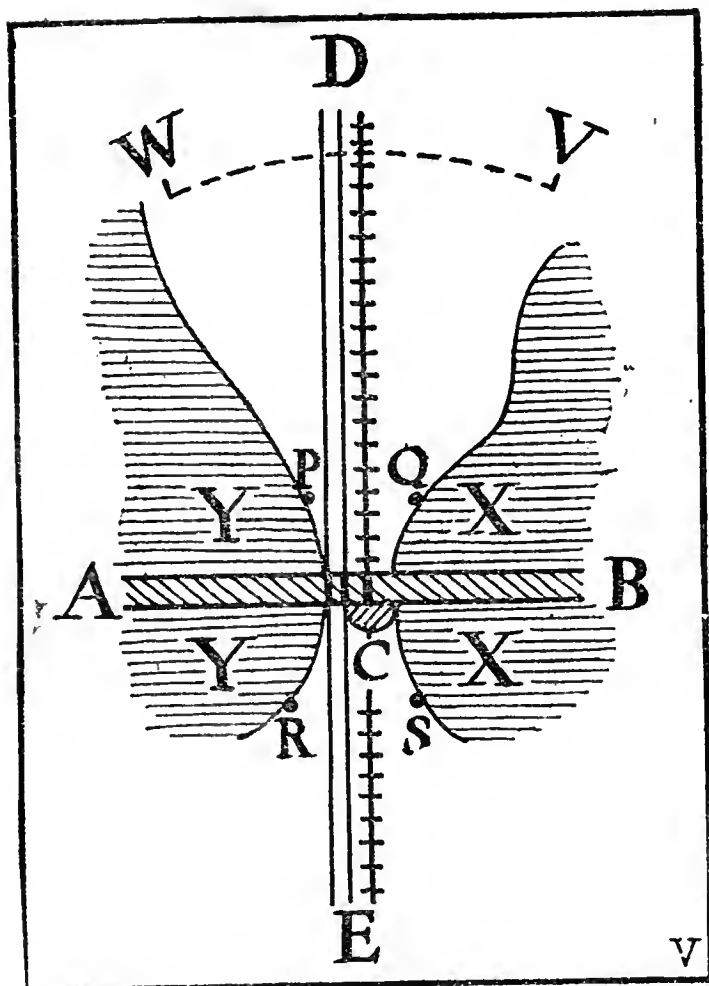
As we have seen, he attacked during the last week of February in three main bodies—the first towards Grodno, the second towards Osowiec, the third in the region which I have marked upon the sketch with the letters A B, a front stretching from the neighbourhood of Khorzele to that of Mlawa.

In order to follow the fortunes of this triple attack it is necessary to appreciate the fact that here upon this frontier, as upon the whole line where Russia and Germany meet, the enemy has provided a perfect network of railroads upon his side to which the Russians have built nothing corresponding. Indeed, it was the knowledge that the Russians, sooner or later, would perfect their system of railroads which, among other things, tempted the German Government to force on the war at the moment it did. This German series of railways, the main line exactly following the frontier and feeders coming out from it at regular intervals, is clearly shown upon the sketch. We shall see how this affected the fighting.

The smallest column, consisting of only one Army Corps (the 21st Army Corps of the German active Army, a first-rate body), crossed the Niemen at the point I have marked X upon the sketch, about fourteen miles north of Grodno. It was able to do this under the cover of a thick belt of wood which here passes the river and extends eastward, but it did not cross in any great force, and, as we have seen, its object was no more than to occupy the enemy in this region and to prevent his forces there from coming down South to the main field of action near Warsaw. Precise details as to this crossing are lacking, but it would seem to have taken place round about February 20, and such units as got across the water would seem to have lingered there for rather more than a week, awaiting the developments that might take place down South. They did not proceed further than the limits of the wood which had covered the operation.

In front of Osowiec the second column had for its mission the reduction of that central fortress and gaining possession of the railway, which here crossed the fortified line.

Now the elements of Osowiec are simple enough. You have a river (see plan 5) A B, a townlet at C on its banks, a railway and a road parallel to each other on the line D E, and upon either side of this crossing place at C two great marshy districts X X and Y Y, the narrows between which are occupied of course by the crossing and by the town of Osowiec itself. Taking advantage of so strong a situation, permanent works have been erected round Osowiec as at

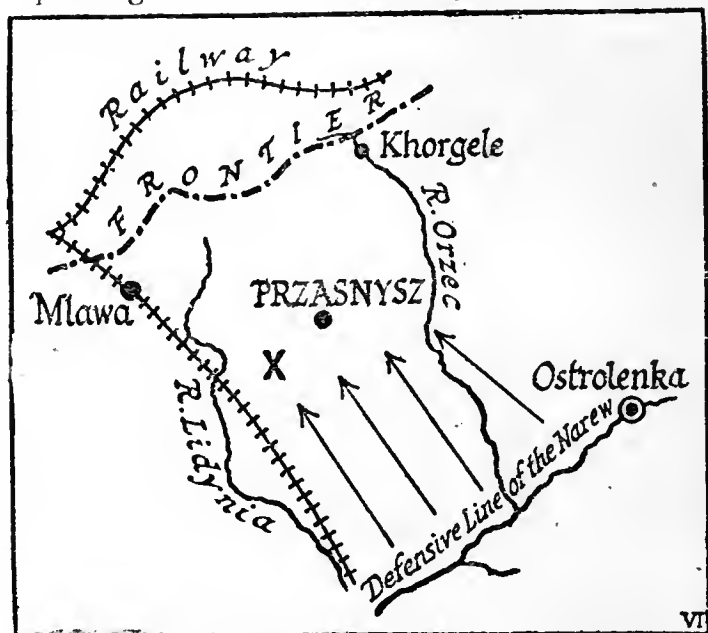


frontier railway, and supported with munitions from that line, being further supplied from its right by the railway which runs south-westward across the Frontier through Mlawa, the German line began to advance upon Monday, February 22.

The district is one line between the Rivers Orzec and Lidynia, which rivers reach the fortified line defending the Warsaw railways about fifty miles away from Mlawa and Khorgele.

The Germans advanced not quite half way to the defensive line, having, for the centre of their effort, the town of Przasnysz. Their right followed the railway line down from Mlawa, their left the marshy river Orzec. They reached Przasnysz upon Wednesday February 24, after a carefully co-ordinated advance in line of rather over twenty miles. Upon Thursday, the 25th, they overwhelmed the Russian outpost there (a Brigade with a few guns), announced a great victory, and re-formed their line for further advance.

Another larger Russian advanced body, a whole division, occupying a swell of land at the point I have marked X on this sketch, detained them and fought very gallantly for thirty-six hours against far superior numbers in order to permit the arrival of three Russian Army Corps coming up along the direction of the arrows from the



Narew. The right of this Russian force forced the passages of the Orzec against a stubborn German resistance, the left relieved the isolated division, which had been holding out at X, and the German line began to give way. It is worthy of note that the Russians discovered the new levies to be insufficient, though in equal or superior numbers, to resist this advance. In the course of Friday, February 26, Przasnysz was re-occupied by the Russian forces, and a general German retirement began. It was no rout, as the journalists of the Allies were sanguine enough to maintain; only ten thousand prisoners and perhaps a score of guns fell to the victors. But the significance of this extended action—which goes by the name of the Battle of Przasnysz—lay in the fact that it marked the close of the second chapter in this great operation, and the frustration of the German design to reach and pierce the Narew defensive line.

As the German retirement in the first days of March fell back in orderly and leisurely fashion to the original line Mlawa—Khorgele, the nearer it got to its frontier railway, the stronger it became, and the less effective was the Russian pressure against it. From that day to this, over a

P Q R and S. The German siege train coming up from the direction D had the advantage of the railway to supply it with its ammunition and to move its heavy pieces. It had the disadvantage of being able to occupy no more than a rather narrow sector W V between the marshes, and to this must be added the fact that the roads, or rather tracks, running latterly from the main causeway are very poor, and at this time of year, especially in this open winter with its alternate frost and thaw, ill able to support the passage of heavy munitions. Further, the district is very flat, as may be presumed from the presence of so much marsh, and the opportunities of hiding a howitzer from the direct fire of the permanent works are not numerous.

From all these causes combined the bombardment of Osowiec, though begun in this last week of February and continued to the present time, has so far been of no effect. It has been reported that the Germans here emplaced pieces of 16 to 17 inches calibre. I venture to doubt this until there is better evidence.* But it is certain that the large Austrian pieces of about 11 inches were present, and it is remarkable that the bombardment should have been prolonged over so many weeks without any apparent result. Whether this were due to insufficiency of air work or to whatever other cause, we are not told. At any rate this bombardment of Osowiec, the work of the second column, was, like the advance on Grodno, only subsidiary to the main operation, which was the advance upon the lower Narew and the attempt to pierce that line and get upon the railway in the neighbourhood of Warsaw. This advance was conducted apparently in a force of four Corps, among which it was destructive to place two composed in the main of the new German levies.

Having massed upon the front Mlawa—Khorgele, about a day's march in front of the Prussian

* There are probably now in the field a few new German howitzers of about 14 or 15 inches calibre.

period of three weeks, the Germans have here remained entirely upon the defensive. Nor have the Russian forces, which could effect no general strategical results by further advance northward in this region, been re-inforced for the purpose of prosecuting such an advance. They remain drawn up in front of the German lines, content to contain the enemy, and to watch any further attempt of his to take the offensive again.

For about a fortnight, the fighting here took the form of a scattered number of local engagements, in which the Russians have taken a certain number of guns, continuous dribblets of prisoners, and have, in a few places, advanced slightly by the capture of disputed points.

At the end of the fortnight, about a week ago, the Russians noted a very considerable new concentration taking place in front of them. They announced the imminence of a new great battle and of a further attempt upon the part of the enemy to force the Narew line, but the situation has not developed, and, after three weeks of indecisive and petty actions, not only on this front, but everywhere along the frontier, a detailed German communiqué enables us to define, with an accuracy rare in this Eastern campaign, the exact cordon of positions held by the Germans as late as a week before these lines will appear, Thursday, March 18.



The German line, then, upon that day, starting from the Vistula, ran as follows:

From just east of Plock, it ran almost due north to Zuromin, which means that the flank here has been bent well back by some recent Russian concentration in that region, for, quite a short time ago, it was far eastward of such a line. From Zuromin it turned to run south of Mława, south of Khorgele, and just south of Myszyniec, and on south of Kolno. There it bends a little away from the frontier, follows the left bank of the Bobr for a

very short distance, and is then bent round in front of the guns of Osowiec. From those marshes it turns northward, just includes Augustowo, covers the local chief town of Suwalki, and reaches Mariampol to strike the main international line from Berlin to Petrograd at the station of Pilwiski. Thence it bends right back close to the frontier, and reaches Taurögen, beyond which point it is not prolonged.

Now it is clearly apparent, from the trace of this line upon the sketch, that it is drawn with the single object, for the moment, of covering the East Prussian frontier, and of drawing its provisions from the scheme of railways that runs just within German territory; and though, from such a line, further German forces may initiate a third chapter in the great movement, and may attempt yet another advance in force against the line of the Niemen and the Narew, yet the main object of remaining in precisely this situation, with such considerable forces, is the political object of saving German soil for the moment from further molestation. With the exception of the point at A, where the line just touches the Bobr, the whole system is clearly designed as a screen against raids into East Prussia.

It is the first rule in war not to do what your enemy expects you to do, but it is a secondary rule, sometimes of value in practice to do, from time to time, what, for any reason, he particularly desires you not to do. It is evident that the enemy is, by the disposition of this line, nervous about the purely political element in the situation, German soil. He will, apparently, make some considerable sacrifice for the, not military, but political, object of saving that soil from further suffering. The Russians, therefore, have, in the last few days, undertaken an expedition detached, and presumably of no very great size, against the isolated seaport of Memel, in the extreme north of the East Prussian province.

We must remember that East Prussia is German in its wealth much more than in its texture. It is the squires and the merchants in the towns—the town population in general—that regards, with peculiar fear, Russian action over the frontier. That the attack on Memel has a strategic object may be doubted. Prophecy, and even conjecture, in any campaign, particularly in such a campaign as this, where the value of secrecy has been so thoroughly comprehended on every side, is futile enough, but it is not easy to believe that any serious action could be undertaken from the Memel district. It lies at a very great distance from the mass of the Russian forces, and an advance from that corner would butt at once into the serious obstacle of the broad and deep Niemen, just near its mouth, and upon all that Tilsit district which our Ally found it impossible to traverse in his last advance of December and January. We are, therefore, fairly safe in regarding the raid upon Memel as designed to increase the nervousness of the enemy only, and as further designed to increase an exasperation which is apparent in the wild order for looting and burning masses of Russian property by way of revenge for this incursion, exasperation of such a sort being the worst possible counsellor in war.

The telegrams to hand speak of the participation of the civilian population of Memel in the fighting. If that is so, it will mean, of course, that the German example, though it will not have

been followed by our Ally, can at least be pleaded for any just severity the Russians may have seen fit to exercise at Memel in the pursuit of legitimate warfare, and the first instance of this kind which war has afforded may be valuable as some indication of what the enemy's policy will be when, or if, hostilities upon a considerable scale shall be raging on his own soil. We must wait for further news to know whether the raid into Memel can even be continued.

Nothing would be easier than for the enemy to move considerable forces in relief of the town. He has a good railway leading up to it on his side, and the Russians have not, I believe, any such facility of communication on theirs. But the diversion is interesting, and its consequences may be well worth following.

II.

YET AGAIN—ATTRITION.

It is right enough that what has been said first by a few individuals concerned with the exact study of the present campaign, and what they have learnt from those actively engaged in prosecuting it in the field, should somewhat later be published officially, and this is what has happened in the case of the trench-fighting in the West.

It has been pointed out continually in these columns for many weeks past that the effort against the trenches in the West was not, in the main, an effort at breaking through, but an effort at wearing down. In the ultimate analysis, victory consists in the imposing of the victor's will upon the vanquished. This, in its turn, is only possible by the military success of the victor's army over the vanquished, and this last phrase only means, when it is translated into terms of real things, the disarmament of your opponent in a larger measure than of your own forces; and in proportion to the extent of his disarmament, compared with your own, is your victory complete.

Now an enemy is disarmed (by compulsion rather than persuasion, which is another matter) by one of five methods or by any number of them combined. These five are death, disablement from wounds, disease, capture, and the destruction of his organisation or cohesion.

Supposing your enemy meets you with a number of armed, equipped, and organised men equal to your own, and supposing that in any fashion, after such and such a lapse of time, you have reduced the number of his armed, equipped, and organised men to one-half of your own. You have lost, of course, heavily, and it is the difference between his losses and yours that has put him into this unfavourable posture.

Having to meet you now one to two, he is hardly sanguine of success. He already discounts defeat; he is perhaps prepared to accept part of your terms. If you are not satisfied with this, if you believe you can go on increasing the disproportion, and if you regard your full terms as essential to your future safety, you proceed with the task of disarming him by death, by killing in action, by capture, by disablement in action, by breaking up his organisation with heavy blows against him, and by allowing the wastage due to sickness to run its course.

Being already two to one, you can probably accelerate the pace of the process, and in a comparatively short time compared with the first period, disarm forces, yet perhaps by a number

and quality combined, not as one to two, but one to four, compared with your own. When he is in such an extremity he will probably accept your terms; and if he does not, why you go on.

All the wars of history, all the great actions, dramatic or dull, all the campaigns, whether slow and confused like the Peninsula, or simple and immediate, like that of 1815, are, at bottom, nothing more than examples of this fundamental process.

All war is the attempt to disarm the enemy, and we only talk of "A War of Attrition" as a special case when we mean that the process is a continuous and detailed one instead of a rapid and wholesale one.

What happened, for instance, at Waterloo—a decision arrived at within ten hours? What happened was that a French force, acting in the proportion of about seven to six (if I remember rightly) found its opponents swelled by the advent of their Allies till their fighting, no longer more than seven to nine, broke under the strain (that is, lost cohesion) and, upon reforming after the pursuit, stood to their opponents no longer as seven to nine, but as less than three to ten. The Duke of Wellington's command and Blücher's had disarmed the French by killing, by capture, by disablement through wounds, and by scattering them. They had lost a great number of men themselves, but they had made the enemy lose a very much larger number in proportion, with the result that two or three days after the battle with the figures stated in this extreme contrast, about three against ten, nothing more could be attempted, especially as to the numerical disproportion was added of course the moral shock.

There is an inevitable tendency everywhere, save perhaps in the higher command, for armies and the civilian opinion behind them to be struck by the adjuncts of military success more than by its fundamental character. Whether the enemy retreats or goes forward: whether he loses guns: whether he is fighting on his own soil or on ours: whether a success is achieved quickly or tardily.

All these things have their value, for they are of moral effect, but ultimately the real test is "How do the numbers of armed, equipped and organised men, and of the materials at their disposal, stand upon either side, and if, by your method of action, whether Fabian or Napoleonic (though the phrase is hardly fair to Napoleon, who could be as Fabian as anybody) you are more and more tending to leave your enemy in a lower and lower proportion numerically to your own men, you are heading for victory, and if the contrary, you are heading for defeat."

In this particular case of the trench fighting across North-Eastern France you have as pitiless, but as clear an instance of this last principle as history has ever afforded. The "Eye Witness" with the British forces has at last set it openly for official publication, and it has been aiming for months past in all the work of the Allies: the work is a work of attrition. There might be a collapse at any moment in some section of the enemy's defensive line. There might be, therefore, a breach achieved there. If that comes off unexpectedly, so much the better. But it is improbable, and it is not the main calculation. The main calculation is directed towards perpetually lowering the numbers of the enemy as compared with the numbers opposed to him, both in men and in material, until at long last the tide shall have turned.

In the French formula "the enemy, having been drawn to put forth the maximum of his effort before your own maximum of effort against him is reached, the growth of your effort to a maximum shall correspond with the decline of his."

It is the only principle upon which forces inferior at first in number and in munitioning can make for ultimate victory.

It must, therefore, whether after such a sharp local success as Neuve Chapelle the other day, or after a sharp local reverse such as that of Soissons some months ago, be perpetually repeated that what counts (supposing discipline and all moral to remain unaffected) is not the local defence or retirement, but the proportion of total losses even at Soissons, where against a single depleted French Division certainly two, and possibly three, corps converged, and where reinforcements failed through the breakdown of the bridges in the flood of the Aisne, the enemy lost about three men to the French two. A French body of about 14,000 men beyond the Aisne lost in killed and wounded, and in prisoners, half its effectives. The blow was severe, the enemy advanced over an area almost exactly equal to that seized by the British a fortnight ago at Neuve Chapelle. But the enemy gained this local success at an expense of not less than 12,000 men. That is the estimate of men who were not engaged in influencing public opinion, but surveying as eye-witnesses the nature of the action: of men who saw the dense German masses swarming down the valley to Conchy at its narrow mouth, and who saw the play of the 75's upon those masses from the spur above Soissons which was ultimately abandoned.

At Neuve Chapelle, tacitly and locally a success, you have the same principle at work as at Soissons, which was tacitly and locally a defeat, save that at Neuve Chapelle the proportionate enemy losses were more than three to two—more nearly two to one.

The enemy has told us that Sir John French's estimate of 17,000 to 18,000 losses upon the German side is ridiculous, and that the real losses were more like a third of that amount.

Let us digress a moment to analyse that statement.

THE GERMAN COMMUNIQUÉ ABOUT NEUVE CHAPELLE.

The advance at Neuve Chapelle was made against a front of over 4,000 yards and covered a depth nearly a mile wide at its maximum, I believe, or possibly a trifle more. The total area rushed was, I suppose, nearly two square miles in extent, and the succeeding lines of trenches occupied were not far short of two and a half miles long. Let us suppose that this front were at first being held by so small a number as 6,000 men. The calculation is a very rough and confused one, of course, because a defensive front is not held by one fixed number of men, who are rooted there like trees, but by a minimum actually on the spot always, with considerable reinforcements available in a comparatively short time, whenever serious pressure develops upon them.

The troops on the spot upon that Wednesday morning were taken completely by surprise. For thirty-five minutes they were in as bad a storm of heavy shell as has fallen on anyone in the campaign, except possibly at one moment near

Perthes three weeks ago. A further belt of shelling immediately behind them forbade retirement, even in disorderly groups. The moment the shelling ceased, the British concentration was upon them. Of prisoners taken, apart from all other casualties, you have some 2,000, and under a shelling from which there was no escape you have the greater bulk of the men who were holding this first line of trenches.

Next following upon this completely successful stroke of the Wednesday morning, you have three successive days, if I am not mistaken, of attempts to retake the positions lost. There is here no question of surprise; the enemy is not able to concentrate, unwatched, as the British, either from weather conditions or from the polity of the enemy's air work, we believe concentrated unwatched, before the main action. The Germans' counter-offensive is expected and taken for granted. It is met as every such expected attack can be met. It is poured in from reinforcements and still further reinforcements and is regularly and methodically repelled. That means upon the face of it continuous heavy losses, necessarily exceeding those of the defensive, and particularly exceeding them in the case of troops who come on, as we know, as the enemy does in this campaign.

We know what the losses were upon the successful side in the first surprise attack and in the defensive work which succeeded it, and it lasted, I understand, for three days. The enemy asks us, in his statement of his own losses, to accept for these losses a figure only two-thirds that of our own. That is nonsense, and does not even, as has often been the case in the past with the enemy's figures, accomplish misguidance.

No one will believe it. If the enemy had said: "Our losses were not 18,000, as you imagine, but very little more than 12,000," the statement would have had its due effect, and would have had weight with that kind of man who always tends to react against every confidence; but when he says that his losses were not 6,000, there is nothing doing.

Those who are interested in this point may further note a very characteristic detail. Some weeks ago the French published their estimate of the German losses on the Perthes front. The Germans issued a statement in which they used the very same phrase that the losses were "not a third of the French estimate."

In conclusion, it must be reiterated that the devices of this sort for misleading an enemy are perfectly legitimate, and that the enemy's misstatements of this kind are no more unworthy than the calculated reticence which is so striking a feature of the Allied accounts; but there is apparent in this German work exactly what you get in the great bulk of German historical work and textual criticism—to wit, the sharp contrast between painstaking and bad judgment. The enemy, as a general rule (and particularly in the early stages of the campaign), gives us very careful statements of acceptable detail. He sometimes gives us false statements carefully thought out, for the sake of producing effects which may reasonably be expected—e.g., when he tells the public at home that Scarborough is a fortified port, or that London, having been in fear of Zeppelins (which it is), was hiding in cellars (which it was not). He has also often given us, and

sometimes continues to give us, false statements which sufficiently resemble the truth as to be acceptable, or which so refer to matters we cannot judge as to leave us in doubt—e.g., his statement that the whole of the Russian 20th Army Corps had gone with a loss of some 50,000 men. The real loss in that particular case turned out in the long run to be something under 25,000.

But he also puts in (and particularly of late, since he has begun to feel embarrassed) statements which do not belong to either of these categories and which it is stupid for him to put forward, as that noted in the beginning of this week's notes, that the whole Russian 10th Army Corps had been wiped out, so that the German prisoners in Russian hands were only a sixth of the numbers officially given by the Russians, and this last protest about his losses at Neuve Chapelle came under such a heading.

CAUSES OF SUCCESS OF THE POLICY OF ATTRITION.

To return from this digression to the policy of attrition, we know, and it has been analysed in these columns, why one can calculate upon the proportion of losses of the enemy being nearly always greater than that of the Allies, although the Allies are the attacking party. It is due to the facts that the attacks are carefully calculated to a local effect alone; that superior air work allows them to concentrate with greater security than the enemy; that the heavy artillery on the Allies' side is now at least equal to that of the enemy, and usually, from the excellence of air work in correcting the shots, surpasses it in effect; that the Allies work with larger

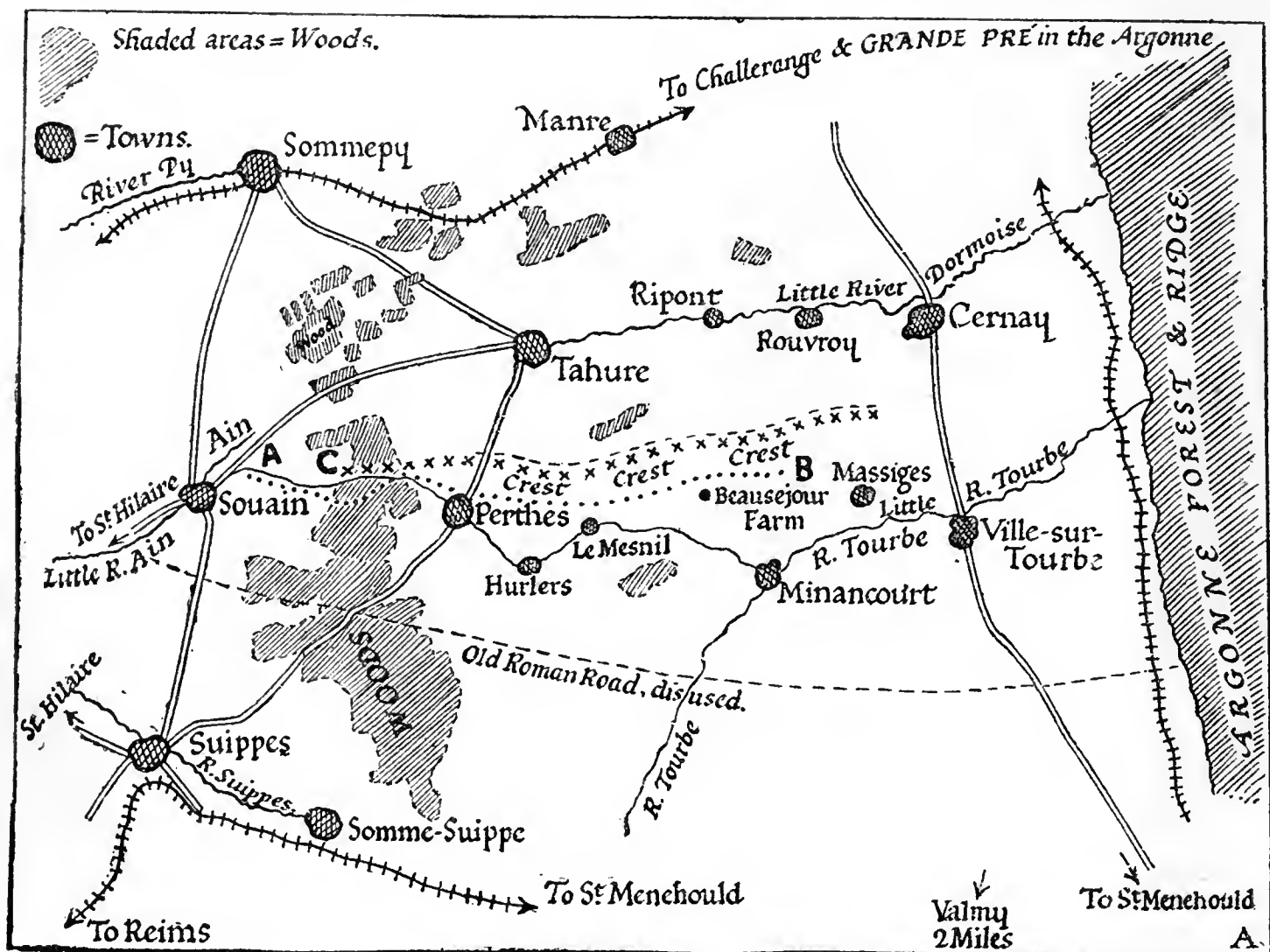
reserves than the Germans in the West, and that the German counter-offensive is nearly always undertaken in massed formation.

Now, so long as this principle of attrition can be continued successfully, that is so long as the tenacity required for so strict a plan avails, neither the command that orders it nor the public opinion behind the command at home will change their policy, for the Allies in the West are heading directly for the aim of all war, which is the disarmament of the enemy in greater proportion than on'e own disarmament, in a given time.

That policy will be working both in the means and in the end. It will be working in the means because the ceaseless fretting at the lines is continuously costing the enemy more than it costs the Allies. It will be working in its ends as well, because the fruits of such a policy, *unless the enemy can achieve a decision in the East and bring back masses westward*, must be ultimately the breaking or the shortening of the German lines, with the consequences frequently being described here. We are able now to estimate one very considerable example of this policy of attrition, of the way in which it is conducted and of its results in the Champagne fighting. Full details of the whole operation upon the Perthes front have been supplied by the French Government and by an English eye-witness, to whom the French Government gave special facilities, so that we are in a position to follow out, in detail, the whole of this large operation.

THE OPERATIONS IN CHAMPAGNE.

The whole front of this great effort, which lasted from the middle of February to the end of



the first week in March—that is, for three weeks—is contained between the high road running from Sommepey to Suippes through Souain, and the high road running through Cernay through Ville-sur-Tourbe towards Ste. Menchould. That front is fed, on its French side, by the railway from Rheims to Ste. Menchould, and on the German side by the railway from Rheims to the Pass of Grandpré in the Argonne. The distance between the two high roads is an average of about twelve miles. Less than nine at the north end, and nearly fourteen at the south end. This country is a very peculiar one, the characteristics of which I have already partly described in past numbers. It is a rolling land of chalky texture, but not like the chalk of our towns—chalk friable and mixed with a very thin, poor earth. The crops are insignificant, and the whole area is studded with little stunted plantations of pines, deliberately introduced by Government some fifty to sixty years ago, and very regular and ugly in appearance. Just south of it is the big camp of Chalons, dedicated, as such sterile districts often are (like Salisbury Plain and Dartmoor here) to military uses, and especially to artillery practice. The few villages, which try to nourish themselves by the cultivation of this land, are quite small, ranging from one hundred to two hundred inhabitants (thus Massieges has less than one hundred and fifty, Minaucourt barely two hundred, Perthes itself only one hundred and seventy, and Hurlus just over one hundred, while Tahure had—it is still in German hands—one hundred and ninety-nine). Even Ville-sur-Tourbe has but just over five hundred. It gives some idea of the contours of this bare and barren country side when we know that the water levels of the Dormoise and of the Tourbe are about two hundred feet below the crests of the swells between the watercourses.

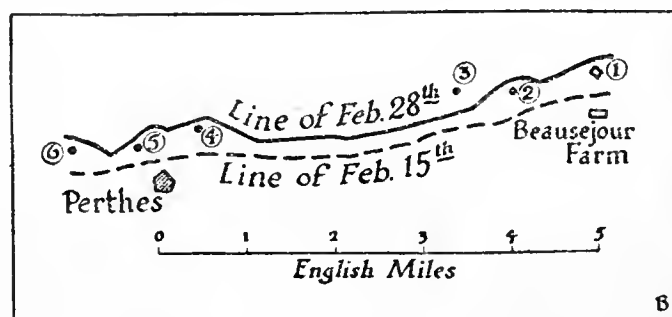
The choice of this front for the considerable French effort that has been made was due both to the fact that the thin chalky soil dries rapidly in each interval of windy weather, between the days of rain, and to its being the watershed of this part of Champagne. All the little streams of the district rise round about these villages, the places at the head of each stream being distinguished by the prefix *Somme*, meaning source. The whole place has been for ages a natural fighting-ground. Valmy is in the neighbourhood; the place where Attila was defeated is not so far off.

When the attack began the French line lay in and out of the road running from Souain to Perthes. It is a bad little road, kept up out of the local rates, and not forming part of the national system. I remember it well. But that is by the way. The French line on this 15th September ran as the dots run from A to B. It also ran, of course, on eastward and westward beyond A and B, but the great French effort was made just there.

Now, in all the work of those three weeks the French got no further than the line C marked with crosses, which gives them possession of the crest overlooking the depression through which the Dormoise runs. The average advance was not, I suppose, more than five hundred yards, but was, perhaps, nowhere a full thousand.

And that is typical of the whole business in

every part of the line. The order is not to break through—yet: it is to wear down.



The 16th and the 17th February were spent in fighting for a little field work which the Germans had strengthened at the point (1) in front of Beausejour Farm. It was taken and lost in part for a week; 23rd February still saw that point in front of Beausejour in dispute. The 27th came, and it was not yet wholly carried. It was not until the last day of the month that the work was entirely in French hands. Exactly the same thing went on with point (2), which is a little swell of land, upon the crest from which one can see the fall northwards towards the Dormoise, except that it was taken two days earlier—on the 26th. The most violent efforts were made during all the succeeding week to recapture it, and the Guard, which had been borrowed from the La Bassée district and the neighbourhood of Neuve Chapelle, were hurled at it day after day. Point (3), which is also upon the crest, the Germans retained almost to the end. At (4), just in front of the ruins of Perthes, it was the same story—a very gradual advance against German field works, which was not successful until the end of February; and at (5) a regular little effort was, just like the point at (1), half taken in the first days of the movement, but only finally held on the 27th February. Lastly, at (6), on the extreme west of these few five or six miles, a wooded post, held with the greatest tenacity by the enemy, was not carried until the very end of the movement, upon the 7th of March.

Now, in this effort, something like a *quarter of a million of men* were pushed up on the French side, first and last, during the three weeks. The application of that blister brought up on the enemy's side a smaller or larger number. There was no question of breaking through. The task was to force the Germans to borrow men from all up and down the line (which among other things produced Neuve Chapelle) to make them continually in these weeks of counter-offensive and fruitless assault pour out their strength and waste it. No one attempting to gauge an effort of that kind by the mere belt gained comprehends its purpose. The first violent advance, which is expensive, but which is prefaced by a whirlwind of heavy gunfire (destructive to the enemy in killed, wounded, and prisoners, at least as much as to the Allies' side), is expensive, but its object is attained. It gets possession of points upon which the enemy breaks himself over and over again in the succeeding days, and in the balance to be struck at the end of these continual efforts the weaker in proportion to the Allies every time. The very slowness of each advance is almost a measure of its great meaning.

two main lines along the arrow-heads towards the Russian depôts in Russian territory. I have marked this main line of communication in double. The four railways across the passes of the Carpathians (1, 2, 3, 4) join the lateral railway along the foothills of the Carpathians, which the Austrians have for months been trying to get a-straddle of, and only once really dominated, during the few days when they held Stanislaw at the end of February.

Now, in this railway system, the investment of Przemyśl made a gap and an interruption represented roughly by the circle A B C, and the Austrian front, moving across the Carpathians and attempting to relieve Przemyśl and turn the Russians out of Galicia, lay along the line of crosses D E. So long as Przemyśl held out all the munitioning and supply of the Russian front, which was withstanding the Austrian pressure, upon that line D E, was based upon Lemberg, and suffered difficulties in proportion as one went westward towards the Dukla. With Przemyśl fallen, these difficulties disappear, and the whole front becomes of equal strength for the reception of reinforcements and of munitioning. At

the same time the main railway line through Galicia, which the circle of investment A B C round Przemyśl interrupted, is released for fully supporting the Russian front towards Cracow, which stands about eighty miles away in the direction F.

In a word, the fall of Przemyśl will give the Russians in the next week or so a complete and restored set of communications behind their Carpathian front, which has hitherto been hampered and interrupted by the resistance of the fortress. Bodies of men can be moved at will, and rapidly, against any point that is threatened by an enemy concentration, and such concentration is far less easily effected by the enemy along the detached lines which separately cross the mountains at 1, 2, 3, and 4, than by the Russians who hold all the connected lines on the Galician side and the lateral railway along the northern foothills of the range.

For a further analysis of this important piece of news we must wait for the full details which will presumably come in during the rest of the week, and I will deal with them in the next issue of this paper.

THE WAR BY WATER.

By FRED T. JANE.

NOTE.—This Article has been submitted to the Press Bureau, which does not object to the publication as censored, and takes no responsibility for the correctness of the statements.

THE DARDANELLES.

THE Dardanelles continue to remain the chief centre of interest, and, reading between the lines, it is clear that at the end of last week the Allied fleet had received something of the nature of a setback—the Germans will probably eventually call it a “decided defeat.”

I have been somewhat severely criticised in the past for insisting in these Notes that forcing the Dardanelles must necessarily be a very difficult and dangerous operation, and not the mere “naval parade” which so many people were inclined to imagine that it would be. Now that losses have been sustained, there is a tendency for the undue public optimism of yesterday to be replaced by an equally undue pessimism. It is necessary, therefore, to emphasise the fact that whatever public opinion in the matter may be, our Admiralty most certainly did not enter upon these operations without carefully counting the cost or without being prepared for, and anticipating, losses. Nor was it under any delusions as to the relative fighting values of ships and forts. Consequently, though we have had one setback, and may yet experience others, there is every reason to believe that Constantinople will ultimately be reached; though there is always a possibility that its actual capture may be effected by the Russians, if (as now seems established) the *Goeben* is really out of action.

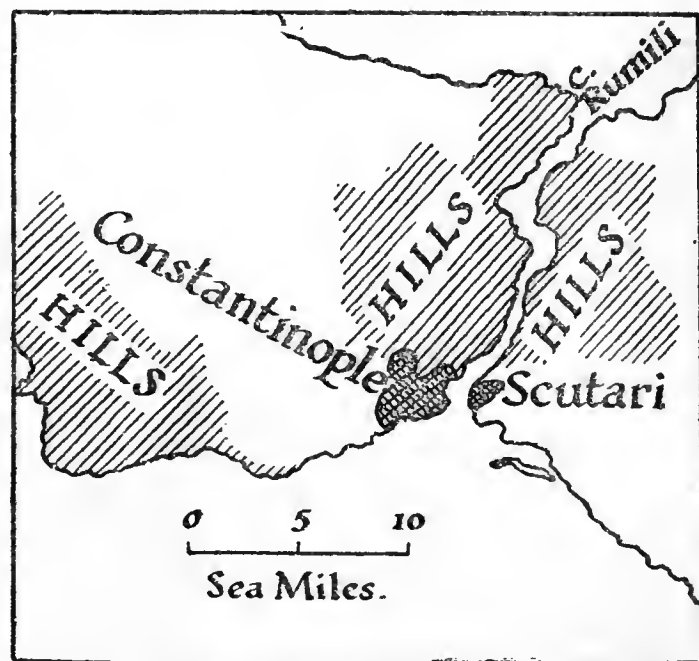
A Russian capture would be politically advantageous, owing to the fact that Constantinople has been her goal for centuries, and in the event of success, will presumably be claimed as her prize of the war. If Russia captured Constantinople, it would clear the air of a possible bone of contention between the Allies on “dragging chestnuts out of the fire” lines.

What Russia can or cannot do depends entirely on the condition of the *Goeben*. A disabled *Goeben* means that Russia has undisputed command of the Black Sea, and that Russia is, therefore, in a position to land a large invading force to the north-west of Cape Rumili, and thence march on Constantinople—a distance of twenty miles or so.

The military operations which would be entailed are outside my province, and I have no means of estimating the fortunes of the troops once they were landed. I refer to them merely to point out that any operations, to be successful, must necessarily be conducted with both naval and military forces, the work of the Russian fleet being mainly confined to covering the invasion and maintaining oversea communications—a thing which, in all her previous wars with Turkey, Russia

was never able to do, owing to the Turks always having been the superior naval power.

Now, however, all that is changed, and the mere presence of Russian warships off the Bosphorus must seem with unpleasant suggestiveness for the Turkish Government. It is



MAP OF THE BOSPHORUS.

also likely to affect matters in the Dardanelles, and should lead to the withdrawal of troops from the Gallipoli Peninsula, a matter which would greatly facilitate the reduction of the forts. One of the many advantages of forts is that, though they be silenced by ship fire, their permanent destruction is practically impossible, unless landing parties be landed, and that, in the face of a strong covering field army, is a very difficult operation for a fleet which necessarily has only a strictly limited number of men available. Matters are simplified if the fleet is accompanied by a military force capable of extensive operations, both against the mobile field army and of attacking forts in the rear.

An attack on the Bosphorus by the Russian Black Sea fleet, should it take place at all, is likely to be confined to a long-range bombardment of the outer forts. From Cape

Rumili to Constantinople is, roughly, only about fifteen miles; but compared to the Bosphorus, the Dardanelles are as a broad highway to a country lane. In addition, the whole passage is tortuous and surrounded by hills from which a plunging fire can be delivered.

The forts are probably even more third-class than those of the Dardanelles; but the position is such that a single six-inch shore gun is probably equivalent to the entire broadside of a battleship in destructive capacity. Furthermore, there are few opportunities for outranging on account of the many twists and turns, and over the greater part of the course attacking warships would have to come singly and in the terribly disadvantageous end-on position. The deadliness of that position (the ideal one of a past generation) is not so much that only a portion of the guns can be utilised, as that the chances of being hit are multiplied several fold. Hitting with modern gunnery is purely a matter of elevation—misses in the matter of direction are so rare as to be almost negligible. Owing to the use of heavily armoured bulkheads, being "raked" has no longer the terrors of the old days, but modern gunnery and long modern ranges have introduced a new danger. The appended diagram indicates how a comparatively slight error in elevation (that is to say, in computing range) may leave a ship broadside on unscathed, while seriously damaging the end-on ship.

Of course, there is an apparent off-set to this. That is to say, an efficiently garrisoned fort normally knows all the ranges from constant practice, and (in theory) is, therefore, unlikely to make errors in elevation. In practice, however, when under fire, errors are far easier. In fact, a ship attack-

venient and more or less dangerous so far as hypothetical damage is concerned, but an assurance against fatal results.

The really important part of the business is the actual bombardment and its results. Of this, only the general outlines have yet reached us. But we have been told enough to know that the forts have given a better account of themselves than the British public expected.

It is to the last degree improbable that either our Admiralty or the French Admiralty were under any delusions. In the early days of the war, when the Germans smashed Liège without difficulty, it was at once assumed on all sides that the days of forts were numbered. It seemed clear that the heavy gun was omnipotent.

Along that assumption Cattaro, the Austrian station in the Adriatic, was bombarded, and all of us took as a foregone conclusion that the lesson of Liège would be repeated, and all the Austrian naval stations fall into the hands of the Allies.

Cattaro forts received a great many shells and a great deal of apparent damage was done. But, after a while the attack was relinquished, and has never been resumed. It was—as I mentioned at the time—somewhat of the nature of an experimental bombardment. As I also mentioned, there was every reason to believe that the experiment would be successful.

Apparently, however, it all only went to prove that what Nelson and others of his era thought of forts against ships is just as true now as then; just as true as when, in 1882, after the British Fleet had pounded the Alexandria forts into ruins the American officers who witnessed it laid down the maxim

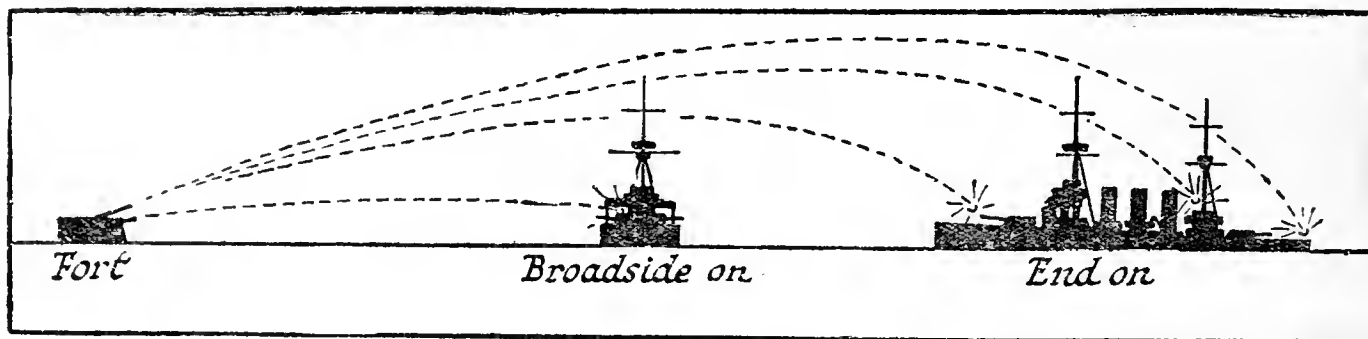


DIAGRAM TO ILLUSTRATE HOW A SHIP END ON IS A BIGGER TARGET THAN A SHIP BROADSIDE ON.

ing a fort relies mainly on obscuring the fort's vision with dust and the shattering of nerves by big shell explosions, which, as like as not, do no other harm. That is why the fort retaliates by placing its position finders well away from the fort. This ensures range-finding being fairly free from the dust problem, but it does not protect the sight-setter from nerve-strain. Consequently the net result is that the end-on ship remains at a serious disadvantage whenever the range is more than point blank. Consequently, also, a Russian attempt to force the Bosphorus would be a needless risk of warships.

We may now revert to the Dardanelles operations themselves. That two British ships, *Irresistible* and *Ocean*, and one French ship, the *Bouvet*, were sunk by floating mines is not a matter of any great military significance. The fighting value of all three, so far as modern naval warfare is concerned, was very slight—in a line of modern Dreadnoughts any of them would have been a drawback rather than a help on account of their relatively slow speed and comparatively short-range guns. Nor does the fact that damage was done by floating mines amount to much; such mines were expected, and their effects, of course, well understood. The disquieting feature here is that inadequate provision appears to have been made to meet this form of attack. I say "appears," because some time ago there were apparently well authenticated rumours of a German submarine having been smuggled into Constantinople in sections, and a German submarine may, perhaps, have done what Turkish mines are assumed to have done. Incidentally, the Germans attribute the damage to "torpedoes." And here, *en passant*, it may be observed that had several submarines been available for the defence, the Allied Fleet would probably have been rendered impotent.

As for the actual floating mines, these are easily to be provided against by precisely the same means as those employed fifty years ago against "torpedoes"—as mines were then called—by Admiral Farragut in the American Civil War. A boom defence in the bow is ample to render floating mines innocuous, and all that they can really accomplish is to compel attacking ships to adopt the end-on position—incon-

venient and more or less dangerous so far as hypothetical damage is concerned, but an assurance against fatal results.

At Alexandria there were very exceptional circumstances—a fleet out of all proportion to the mediocre defence and all the forts "low site" ones. In the Dardanelles these circumstances are partially reproduced to some considerable extent—that is to say, an overwhelming naval force is employed, and the forts are of a third-rate nature.

Yet even so, considerable damage has been done. The *Inflexible* has sustained a heavy casualty list. The losses of the French Fleet which engaged the forts at close range have not yet been published, but we know that the ships were frequently hit.

The Turks (or their German advisers) appear to have been past masters at feigning disablement, or in bringing up heavy howitzers to replace lost guns during the intervals when bad weather caused a lull in the operations—a condition which has obtained throughout the attack.

The price of victory is going to be heavy—as like as not the losses of the Allies have only just commenced. But the reward of victory—corn ships from Russia, munitions of war to Russia in return—is so great that heavy sacrifices will be well justified. Once the Narrows are passed the worst should be over—once the Sea of Marmora is reached, success is assured. But the way is long and difficult, and there has never been any occasion in the war in which it is so absolutely necessary that the general public shall trust the British Navy.

It is idle to deny that on the face of it the destruction of three battleships in one day by alleged floating mines seems suggestive of carelessness or stupidity, or what not. But it is necessary to remember that (apart from the possibility that it was a submarine which did the damage) the brief official statement gives no inkling whatever as to the dispositions of the ships or the conditions under which they were compelled to act. Criticism of the Navy in such circumstances is not folly; it is criminal lunacy!

THE SUBMARINE "BLOCKADE"

This particular German "revue," like "Charley's Aunt," is still running; but its failure may now be taken as assured. To say that the Germans have lost a submarine for

every victim that they have secured would be hyperbolic; but there is every reason to believe that when the balance-sheet of the operations is available for study it will be found that, taking loss of merchant shipping on our side and loss of submarines and *loss of their services for war work* on the German side, it will be found that Germany figures as the loser. The effort was, of course, mainly psychological; that is to say, it mainly depended on creating a panic which was not created. Thus at one fell swoop it dropped from the stars to solid earth, and all the illusion with which the Germans hoped to surround it melted into thin air.

THE WAR IN THE AIR.

Four Zeppelins have attacked Paris, four hostile aeroplanes have made an attempt on Deal. In both cases the attack was beaten off, a further illustration—if one were needed—of the fact that in aerial warfare as it is at present the attack is handicapped by its dual objective of destroying and also having to ward off and look out for counter-attack, whereas the defenders have only the single objective of destroying the attackers. Over Paris anti-aerial guns appear to have taken as prominent a part in the defence as defending aeroplanes; off Deal the defence was almost entirely aerial. That this aerial defence is the best defence can now hardly be questioned any longer. The net result may be put down as further proof that aerial warfare reproduces ships v. forts on an enlarged scale. Successful attack must be in overwhelming force.

ANSWERS TO CORRESPONDENTS.

H. D. P. (Letchworth).—It is necessary to take into account the enormous number of inventions and ideas which are submitted to the Admiralty. This is bound to create delays such as that to which you refer. There is also the point that although the thing may be perfectly workable, it may not be applicable to the conditions of modern naval warfare. This is the crux of the question. To take an extreme case, consider the inventor who designs a series of armour plates ten or twenty feet away from the ship's hull as a defence against torpedoes. As a defence, this, of course, would be absolutely ideal, but it is totally inapplicable because it would render the ship unable to move! This, of course, is an extreme case, but it illustrates my point in hyperbole. I quite see your point about the successful inventions of non-experts, but I cannot call to mind a single case of any such invention applied to naval matters. The Whitehead torpedo might at first sight appear to contradict this, but Whitehead was a competent engineer working on certain definite lines connected with his own profession. The vast

majority of people who submit things to the authorities simply send in the "idea" which they are convinced "would work were proper experiments carried out with it." It is these absolutely non-technical people who choke the way for those who, though non-naval, are at least engineers.

W. M. H. (Eastbourne).—(1) The *Inflexible* normally belongs to the Mediterranean squadron. That reason alone would account for her employment in the Dardanelles. (2) The *Queen Elizabeths* are, in a sense, improved battle-cruisers. Lacking a little, perhaps, in speed, they have an improved protection as a compensation. The reason no more battle-cruisers are being built was explained by Mr. Churchill some time ago, when he stated that it was considered better to build a batch of these fast ships in one year than to build them at the previous rate of one a year. (3) The Germans have a successor to the *Lutnow*, but it is doubtful whether she will be completed in time to take part in the present war.

W. N. (Chester).—Very considerable crews are required for the armed merchantmen, and you may rest assured that the Admiralty have not inflated the complements beyond what is required.

P. P. (Glasgow).—A good many aeroplanes are fitted with wireless, and so, also, are many submarines. The distance over which messages can be transmitted from either are, however, small. You may be quite sure that the matter to which you refer has not escaped the attention of the authorities.

H. W. H. (London, N.W.).—Chain shot, if fired from a sufficiently large gun, would certainly be effective against periscopes. The difficulty, however, is to see the periscope in time.

J. M. (Cork).—A torpedo with a war head—i.e., an explosive charge, which misses its mark—is adjusted to sink automatically. Otherwise, it would be as dangerous to friend as to foe. In peace time it would, of course, be adjusted to come to the surface at the end of its run.

G. W. T. F. (London, S.W.) and others.—The photograph of the British and French ships off the Dardanelles is authentic enough, but it is by no means clear that all the Dantons were there. It is very difficult to recognise some of the more distant ships. In any case, you may be quite certain that the Allied fleet elsewhere is quite capable of dealing with the Austrians should they come out.

G. L. S. (Cheltenham).—B 4 was a misprint for B 2. The other boat to which you refer was sunk some time ago.

S. B. C. (Barnes).—The story to which you refer is not only quite probable, but also very probably true. For very obvious reasons the Press Censor has seen to it that it has not appeared in print.

N.B.—Many Answers are unavoidably held over this week.

EVOLUTION OF SIEGECRAFT ON THE WESTERN FRONTIER.

By COLONEL F. N. MAUDE, C.B.

THE engagement at Neuve Chapelle is a striking example of the degree to which the attack in war has now dominated the defence.

In the old days 10,000 defenders of such staunchness as the Germans certainly have displayed would probably have held their own against all the actual rifles and bayonets our troops brought into the field, but to-day the defence, *qua* defence, practically broke at the first rush, having inflicted insignificant losses on their assailants.

What followed—viz., the fighting in which our serious losses occurred, was essentially of the nature of a field battle in which neither side had time to entrench, but went at each other in the open, or seized on villages and houses as points of support—where the lines were so intermingled that artillery power could not be called in to prepare the way of the attackers.

As the whole future course of the war now turns on this established fact, it will be of interest to recapitulate the successive steps by which this present relation of attack and defence has been attained.

As I have pointed out in previous articles the Germans, when compelled to abandon their attack on Paris, fell back along the roads by which their heavy artillery was advancing for the bombardment of the defences of that city.

Thanks to the presence of this overwhelming artillery fire our offensive came to a standstill, for our field guns and infantry were clearly overmatched by the heavy German guns, together with both field artillery and infantry, in numbers

still superior to our own, which awaited us in positions their reserve troops had had ample time to prepare; also at this period the German aircraft showed a distinct preponderance in numbers and activity as compared to ours.

We met the situation, as I have before explained, by getting in under the German guard, i.e., by entrenching on the sides of the hills sloping towards us, so that the enemy's gunners could no longer lay their guns on us by direct vision, but had to rely on the observation of their airmen, which procedure certainly helped, but was by no means equal to laying by direct sighting.

But we could not stop the German infantry from massing behind the brow of the hills and attacking us downhill, and ultimately, under cover of darkness, digging themselves in within fifty to one hundred paces of our firing line.

This, however, obliged the German heavy guns to cease firing for fear of hitting too many of their own side, and our guns, as they came up, found themselves in like case, so that, as the front extended, and reached the great plains of the north, the two infantries, acting under the instinct of self-preservation, got as close to one another as they possibly could—fifty to one hundred and fifty yards—in order to secure protection from the incessant shell fire, which is the most unendurable of all the strains of war.

The artillery arm, being thus for the time eliminated, there was no longer any dominant reason for keeping the trenches flat with the soil, since concealment at fifty yards was quite out of the question, and, as the higher you made the parapet, the more you escaped from the mud, the height

of the parapets again increased, until, as I prophesied, the old siege type of trench founded on Crimean experience, began to reappear.

Had we been quicker to see what was coming, we might have saved many lives, and our men generally would have been spared much suffering.

Then, however, both French and British siege guns began to arrive at the front in numbers sufficient to hold their own against the Germans, and finally, assisted by the growing ascendancy of our airmen, the Allies began to dominate the German gunners completely.

This brought about a further step in the evolution of siegecraft, and one which is entirely novel.

As the German artillery fire weakened, matters became very much more comfortable for our supports and reserves. Instead of resting in cellars and dug-outs our men could come above ground again, and could enjoy decidedly improved sanitary conditions in the wrecks of houses still left in the villages.

The moment the German batteries began to shell one of these places our guns replied, and laid them out for that day, at least.

Our gunners, however, were free to shell and destroy everything within miles which could give cover to German supports; consequently, the latter were driven to dig themselves in even deeper, and driven to take greater precautions

to keep the target, presented by the trenches, low and invisible, more so, indeed, than we had had to do at the beginning.

In some places I am informed that (where the soil allows it) the Germans have had to dig trenches nine feet deep for their supports to live in, and the labour of scattering the earth to hide them, to say nothing of getting it out in the first instance, is excessive, and sanitary conditions, of course, are almost impossible.

Moreover, though, by means of trestles and pickets driven into the soil, it is practicable to arrange these trenches so that men can fire out of them, they are exceedingly difficult to climb out of, and, if an attack is pushed home, their garrisons are caught like rats in a trap, without hope of escape.

In the water-logged plains of Flanders, such deep trenches are, of course, entirely out of the question, and here the difficulty of keeping sufficient reserves within easy reach of the fighting line is becoming more and more acute, an advantage we are pretty certain to make the most of before many weeks have passed.

Now this process is going on in some form or other at every point along the whole of the fighting front, and it makes every movement of the enemy more difficult in proportion as the number of our siege guns is increased, and the store of shells available for them grows greater day by day.

OUR AMBULANCE APPEAL.

AN OUTLINE OF THE SCHEME.

By ATHERTON FLEMING.

FOLLOWING the announcement made in our last issue to the effect that the proprietors of this journal have decided to open a subscription list with the object of raising a sum of money—£500—for the purchase of a completely equipped motor ambulance, I have received many letters, suggestions, and inquiries. To answer all letters is impossible, so I am endeavouring to explain hereunder the features of the scheme. All suggestions will be filed, and will receive the most careful consideration when the time comes for laying out the money. Several writers have made very practical remarks as to the ultimate destination of the ambulance, and there has been at least one offer of both a car and a driver. Taking the question of destination first, and that has been very carefully considered, I have come to the conclusion—after making recent investigations and adding to them my own personal knowledge of the conditions—that the Belgian Field Force is still the most badly off with regard to Red Cross facilities. The work of Dr. Hector Munro and his helpers has done much to alleviate the sufferings of these poor wounded Belgian soldiers, who cannot look to their own country for help for the simple reason that all but a small portion of Belgium is in the hands of the enemy. The remaining strip of Belgian territory is being tenaciously held by these brave men; its loss would mean a severe blow to the Allies. To succour and cheer these long-suffering soldiers has for months past been the work of Dr. Munro, and only those who have seen can understand what he and his helpers have had to go through during these months of bitter weather. Theirs has been a plain, straightforward night and day fight with the horrors of modern warfare in all its grim and gruesome reality. Dr. Munro is not engaged in this work for the sake of the limelight; it is for the sake of the Belgian soldier. He has not the financial resources of a huge organisation such as the British Red Cross behind him, yet he has done wonders with the little help he has received, and he is now appealing for more help. That is why I have come to the conclusion that the readers of LAND AND WATER cannot do better than show their appreciation of his services by presenting him with an additional motor ambulance. It is proposed to deal with all monies subscribed as stated hereunder:—

1. That a subscription list be opened with this issue of LAND AND WATER for the purpose of raising the sum of £500.

2. That this sum be devoted to the purchase and equipment of a suitable motor ambulance, containing accommodation for four stretcher cases and alternative accommodation for "sitting-up" cases and orderly.

3. That the chassis be of a well-known and reputable make—to be decided later—and the construction of the

body be handed over to an expert ambulance-body builder.

4. That details of equipment, such as lighting, &c., be left to the discretion of Dr. Munro, owing to his better knowledge of the conditions under which he has to work.

5. That the motor ambulance—which will bear an inscription: "Presented by the readers of LAND AND WATER to the Munro Field Ambulance"—shall be handed over to Dr. Munro for use with the Belgian Army.

6. That should there be any balance in hand after the purchase and equipment of the ambulance the decision shall rest with the proprietors of this journal as to whether it shall be handed to Dr. Munro for the maintenance and upkeep of the presentation ambulance or used in the nucleus of a second fund for the provision of another motor ambulance.

7. That all cheques, postal orders, or money orders should be made payable to "LAND AND WATER Motor Ambulance Fund" and crossed "London County and Westminster Bank, Ltd." All subscriptions will be acknowledged by the proprietors of this journal.

This is the way we propose to deal with the matter as soon as the state of the subscription list enables us to do so. It does not require a great many subscriptions to raise the modest sum of £500. As I mentioned last week, the sum of one shilling from each reader would be sufficient to supply a fleet of ambulances. Yet it is essential that *every one* should send their shilling. Please do not let your faith in your fellow-man lure you into thinking that the list will easily be over-subscribed without your assistance; if everyone did this we would be a very long time in raising £5—not to say anything of £500.

I make an earnest and personal appeal to everyone who reads these lines to send *something*; never mind how small. Money spent on a cause such as this is never money wasted. I have spent some months in the war area, and I *know* what the wounded have suffered and are still suffering. The matter is now before you, the subscription list is open, and the success of the scheme rests entirely in the hands of LAND AND WATER readers.

MR. HILAIRE BELLOC'S WAR LECTURES.

A series of lectures on the Progress of the War from month to month will be given at Queen's Hall on the first Wednesday in April, May, and June. Seats are now being allotted.

A lecture will also be given at the Opera House, Tunbridge Wells, on Friday, April 9, at 3.30, on "The Strategy of the War."

Mr. Belloc will lecture on the War at Eastbourne on March 27.

MR. JANE'S LECTURES ON THE NAVAL WAR.

Malvern	Assembly Rooms Friday	26 March, 3 p.m.
Shrewsbury	Speech Hall	Saturday
Glasgow	St. Andrew's Hall Monday	27 March, 3 p.m.
Edinburgh	Usher Hall	Tuesday
Dundee	Kinnaird Hall	Wednesday
Torquay	The Pavilion	Saturday

CORRESPONDENCE.

THE SAILORS' AND SOLDIERS' TOBACCO FUND.

To the Editor of LAND AND WATER.

DEAR SIR,—On behalf of the above fund a military Rugby match has been arranged between the H.A.C. and the R.A.M.C. (Aldershot). This will take place next Saturday, at the Athletic Ground, Richmond, at 3.15 p.m. Prior to the match, by permission of the officer commanding and the Court of Assistants, the H.A.C. (Headquarters) brass band will play selections, also during the interval.

Many of your readers are supporters of Rugby football, and would welcome this opportunity to witness a game, and, at the same time, help a fund which is engaged in the good work of supplying tobacco to the British troops and the wounded in the hospitals in France.

Six Internationals have intimated their intention to take part, and four of the remaining players have played in International trial games.—Yours faithfully,

W. EVAN COLLISON,

Central House, Kingsway, W.C.

Hon. Sec.

OUR NEW ARMY HORSES.

To the Editor of LAND AND WATER.

SIR,—In reply to questions asked by Sir William Byles in the House of Commons on March 1 Mr. Tennant stated (a) that under one per cent. of horses purchased for the New Army had been cast as unsuitable; and (b) that less than two per cent. *per month* (italics mine) had been lost from death and destruction before leaving this country. He further stated that the percentage was not considered high.

Let us see what it means. The *Times* of January 5 had an inspired article congratulating the country on the supply of 140,000 horses secured in addition to "36,000 magnificent horses" for the Expeditionary Force and 18,000 for the Reserve formations. It was admitted some wrong 'uns had got in and that some folks had cheated the nation for their own profit. Taking Mr. Tennant's one per cent. we get 1,400 as the figure for wrong 'uns bought by ignorance or chicanery, and allowing £40 apiece for them we arrive at the sum of £56,000 as the amount of loss—less, of course, the small sum received for them on being cast.

But turn to the percentage of horses which have died. Two per cent. *per month* on the above figure of January 5 for seven months of war works out at 19,600 horses which have died. Reckoned at £40 apiece, and allowing £34,000 for Mr. Tennant's "under two per cent." as margin, we get a total monetary loss of *three-quarters of a million*. Does Mr. Tennant not consider this high?

But to some of us it is not the financial loss that is the most grievous question. It is the appalling and unnecessary suffering thrust upon so many thousands of highly sentient creatures. A total of unnecessary pain and cruelty which shocks and shames us. And we ask once more: What is being done for the horses that are still sick, still tethered in lines unsheltered to face the bitter winds of March and April?—I am, Sir, yours faithfully

E. WARD.

161, New Bond Street, W.

THE NEUTRAL FLAG.

To the Editor of LAND AND WATER.

DEAR SIR,—It would appear from what is called the Lusitania incident that the public are ignorant as to the uses and the practice of flying a national flag at sea.

A merchant ship on the high seas normally flies no flag at all—only on the approach of another ship would the national flag be broken. In coastal waters a flag will probably be flown. A flag is never flown during the night—from sun-down to sunup—for obvious reasons. If the Lusitania arrived at Liverpool in the morning much of her passage of the Irish Sea would have been in darkness.

The National flag is always flown from a special flagstaff at the stern or, if she is so rigged, from a gaff on the mast. The flying of a national flag from the masthead is no claim to its use nationally, but is intended as a compliment to the nation so honoured. In this complimentary way vessels entering a foreign port will usually fly at the masthead the flag of that foreign country. In the same way a vessel carrying many foreigners—as the Lusitania would be carrying Americans—might fly, at the masthead, their national flag, merely as a compliment to them.

The attempt to secure protection by deceiving the enemy by flying a neutral country flag as an ensign is probably justifiable, and in the case of an ordinary "tramp," not distinguished by build and traversing no specified route, the result has a chance of success. In the case of passenger liners, whose routes and time tables are published (and at any rate approximately maintained) the ruse might deceive an unusually obtuse German naval officer. An absolutely distinctive ship like the Lusitania stands alone, and she would be identified as the Lusitania long before it was possible to make out what ensign she was flying.

Possibly some non-nautical passenger took the use of the American flag at the masthead to be the use of it as a national flag. This would be an easy error for the non-nautical passenger to fall into. But if the Lusitania did really replace her own British ensign by the use of an American flag, thereby pretending to be an American ship, her Commander must have an exceedingly low opinion of the intelligence of a German commander of a submarine. Further, the speed of the Lusitania is such that a submarine would not have a ghost of a chance, either submerged or awash, of successfully launching a torpedo. I fancy that most sailors will, at present, believe that the Lusitania never flew an American flag in place of her own ensign, but that if she did so—that she did a foolish, because unnecessary and ineffectual, thing.—Obediently yours,

NAUTICAL.

Hillside Cottage, Newbury.

MILITARY REWARDS.

To the Editor of LAND AND WATER.

SIR,—I am glad to see a letter in your paper calling attention to the want of proportion in awarding rewards for military services. In the last list of casualties there is one staff officer wounded out of over two hundred names. Ever since I joined, in 1860, it has always been the same—the combatant gets the kicks, the staff the halfpence.—Yours truly,

R. P.

THE SMALL FIRM.

To the Editor of LAND AND WATER.

DEAR SIR,—I have read with very great interest and appreciation the letter in your issue of March 13th from "One of the Principals of a Small Firm." I should like to take the opportunity of heartily supporting all that he says, especially as since that letter was written Lord Kitchener has informed the nation of the really urgent need for the increased manufacture of munitions of war, and therefore all doubt as to this urgent need, which is queried in your correspondent's letter, is now at an end.

I should like before going further to make it quite clear that my firm, which is one of the small ones, has no complaint whatever to make with regard to ordinary Government procedure as regards inquiries and contracts, which is both good and businesslike, but if the country is actually in need of more war munitions than it can at present obtain, there are, I believe, many firms who would be only too glad to undertake more Government work than they have yet obtained, many, doubtless, having obtained none at all.

I am glad to believe by my own experience, and by the fact of the very big wages being paid by firms recognised in times of peace as firms who make for the Government, that the question of price is not very acute, so long as the Government know that they are obtaining goods from firms who have previously satisfactorily supplied their demands, and that the Government is prepared to pay those firms extra when it is found necessary to work overtime, night-shifts, and week-ends.

On the other hand, it appears that in dealing with new firms the Government is very keen as regards price, and no allowance is made if these firms have to put on a night-shift, which will cost them considerably more proportionately than would a night-shift to a big firm whose custom it was often to run one.

In normal times it is quite right for the Government to buy as cheaply as ever they can, and to be as keen as possible in so doing, but it is quite another thing now, if our existence as a nation to a large measure depends on the supply of this war material, and I would suggest that it is better to be generous as regards prices when offering work to new firms,

and thus enable them to enter into the manufacture of the urgently required articles.

I believe that if the Government could see its way to offer business to various firms at a definite price, and at the same time allow the firms, should that price be too low for them, to state at what price they could undertake the work, it would be found that a very large number of small firms could supply a considerable amount of material to the satisfaction of the Government departments concerned.

Lord Kitchener in his speech requests that firms having men and machinery at liberty should place them at the disposal of the Government, but he does not say how this can be quickly and effectively done. Those of us who are already receiving inquiries from certain Government departments, and yet are not fully employed, would be glad to get into touch quickly with other departments who are requiring goods such as we can satisfactorily manufacture, while firms who are not on any Government department's list, equally desire a simple and quick method of obtaining suitable work.

I remain, yours faithfully,

ONE OF THE PRINCIPALS OF ANOTHER SMALL FIRM.
Manchester.

"THE DIFFERENT SPEEDS OF AN AEROPLANE."

To the Editor of LAND AND WATER.

DEAR SIR,—With reference to his letter in your issue of the 13th inst., "Enquirer" may be interested in the following information. His question (6). While there is no small book published that covers the whole ground of possible inquiries relating to aeroplane capabilities, the need for such book is not felt if one is well grounded in the fundamental principles, and these may fairly well be grasped by the study of "The Mechanics of the Aeroplane" (1912) and "Flight Without Formulæ" (1914), both translations from French works by Comm. Duchêne, published by Longmans, Green and Co. at 7s. 6d. net. The feature of these works is their clearness and simplicity, and the absence of mathematics renders them easily understandable by the layman.

His question (4). While it is true that in the particular machine referred to by Dr. Glazebrook the speed is controlled by adjustment of the angle of attack of the machine as a whole, it should be borne in mind that it is quite feasible to vary the speed by other means in suitably designed machines. For example, subsidiary aerofoils may be used as air brakes, or the angle of incidence of the wings alone may be altered relatively to the body of the machine, either with or without alteration of the camber of the wings.

Yours faithfully,

BERTRAM G. COOPER,
Secretary and Editor, *Aeronautical Journal*.
11, Adam Street, Adelphi, London, W.C.

KHAKI.

To the Editor of LAND AND WATER.

SIR,—The majority of people, if they think about the matter at all, imagine that "khaki" is a product of recent years. This is not so.

"Khaki" was used in India as far back as the late '60's or early '70's for soldiers' uniforms in the hot weather, the material used being a kind of cotton drill. A similar material has been in use in Arabia and by the Fire worshippers of Persia from time immemorial, and is in use to-day in Persia for making their outer robes, the material being made from a natural self drab-coloured cotton which is still cultivated in small quantities in some parts of Persia—notably Kashan and Yazd; the stuff, of course, being entirely home-made—i.e., grown, spun, woven, and made into garments, which, by the way, are very durable. All these processes of production have come under my own personal observation.

We read in the Press that our manufacturers are hard-pressed to provide a sufficient supply of "khaki" material for our new Army; but we have, surely, in the cultivation and development of this particular cotton a potential means of securing our future supply of, at any rate, cotton "khaki" absolutely irrespective of the supply of "dye stuffs."

A supply of seed of this cotton could easily be obtained, and India, Egypt, and Africa could doubtless do the rest in the course of four or five years.

The plant is a healthy grower, with strong branching haulms, full pods, and a long and strong staple. These qualities could, no doubt, be readily improved upon by the cotton-growing experts in the countries above-named.

I wonder if this will be of sufficient interest to the authorities and manufacturers to merit their consideration!

—Yours obediently,

B. W. STANTON.

"LAND & WATER" WAR LECTURES. PROGRESS OF THE SCHEME.

Widespread interest has been aroused in the LAND AND WATER Lecture Scheme on behalf of Queen Alexandra's Field Force Fund. As our readers know, these illuminating lectures have been arranged from the articles by Mr. Belloc and Mr. Blin Desbleds appearing week by week in our columns, and, in remote country villages and large towns alike, audiences have followed the skilful arguments and penetrating analyses with keen appreciation.

The purpose of the scheme is two-fold—to extend the advantage of the most expert war criticism available and to render substantial aid to an organisation that has done splendid work in brightening the lot of our gallant soldiers at the front.

Financially Queen Alexandra's Field Force Fund has reaped no inconsiderable benefit, and it is hoped that public men, clergymen, literary societies, &c., in districts not yet touched will respond to our invitation in even larger numbers, and so still further augment a fund that needs every help possible to cope with the necessities of the new armies ready anon for the front.

Eager as every patriot is to do everything within mortal power to help our troops, but for Queen Alexandra's Field Force Fund much effort would be lost and much waste incurred for lack of proper organisation and facilities.

Working in direct co-operation with the War Office, the Fund supplies comforts to the units in the field with the utmost economy and absolute fairness of distribution.

It enjoys special facilities for cheap purchase of articles required and for free transmission of these and gifts in kind straight to the men.

This is how it is done. Our readers will agree that a better system could hardly be adopted. Instead of supplying the articles on the principle of "so many men" so many cardigan jackets, or pairs of socks, or pounds of tobacco, as the case may be—a method obviously unfair and wasteful, since some soldiers are well provided for by their friends, while others, perhaps the greater number of whole regiments, have no friends, or have friends too poor to send them gifts—instead, it is arranged that the Commanding Officers send lists from time to time of the precise things their men want. The saving is enormous.

Our soldiers' needs are not diminishing as time goes on, but increasing. To the glory of England the enormous armies that have been in training for so many months past will be sent with all speed to reinforce those already at the front and to help strike the decisive blow. In the trenches these new men will want comforts—the comforts that are "necessaries" there. How very urgent is the need for money and supplies will be readily seen.

With one exception, the lectures are illustrated by slides prepared from the maps and plans appearing in LAND AND WATER. Thus the clearness of the subject-matter as regards arrangement and terminology is heightened by diagrammatic reference easily followed by the audience. In most instances additional slides of topical interest are provided.

So far, four lectures have been prepared, their titles giving readers who have followed the war articles in these columns sufficient clue to the material utilised.

- (1) "The Failure of German Strategy."
- (2) "The Deadlock in the West."
- (3) "Can Aircraft End the War?"
- (4) "How Long Will the War Last?"

Each lecture is complete in itself, but where a series can be given it is usually advisable to follow the above order. Texts of the lectures and full particulars will be sent to applicants who can arrange for public meetings, at which there should always be a collection on behalf of Queen Alexandra's Field Force Fund, except where, in the same interest, a charge is made for admission. To save local expense, partially printed posters and other advertising matter are supplied free. Letters should be addressed:

The Hon. Secretary,
Queen Alexandra's Field Force Fund,
24A, Hill Street,
Knightsbridge, S.W.

The success so far achieved has been extremely gratifying to the Field Force Fund Committee, and no less to ourselves, whose privilege and pleasure it was to initiate the scheme. But to the scope and usefulness of the idea there is no necessary limit. Not a town or village in the kingdom but should have its War Lectures to arouse patriotic interest and enthusiasm. All that is wanted is the response of public-spirited citizens willing to spend a little time and interest in a cause most worthy.

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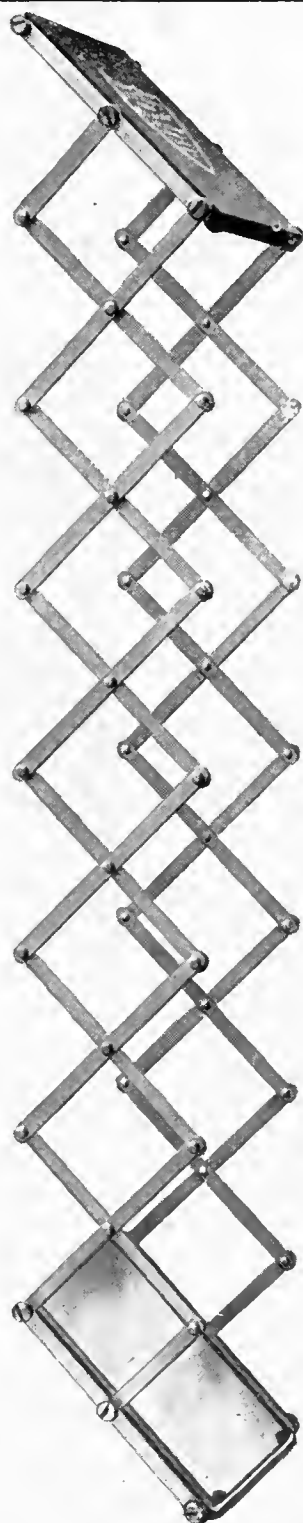
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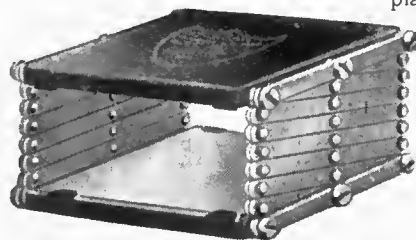
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THE HISTORY AND DEVELOPMENT OF THE STEAM TURBINE IN WARSHIPS

By "A.M.I.C.E."

THE development of the steam turbine, both on land and sea, has been one of the most remarkable industrial developments of modern times. Although the first marine turbine was constructed in 1894 for experimental purposes and the Admiralty adopted it in 1898 as an experiment in a small destroyer, we find that at the end of the year 1913 Great Britain alone possessed 226 warships fitted with steam turbines, having a total horse-power capacity of 4,339,300, and 98 merchant ships with a total horse-power capacity of 928,790; truly a marvellous development.

Mr. Churchill, speaking in the House of Commons on the Navy estimates, praised the design and performance of British warships. It is only natural that our Navy should lead the world in regard to engine-room performances, for the steam turbine, the modern propelling engine of the Navy, is a British invention, and was tried by our Admiralty four years before any foreign power experimented with this type of engine.

The invention of the steam turbine by the Hon. Charles A. Parsons has revolutionised the production of mechanical power on land and sea. It has rendered possible steamship speeds far greater than could ever be attained with reciprocating engines. Although the adoption of the steam turbine is quite a modern engineering development it is, as a matter of fact, the oldest steam engine in existence.

The Greek philosopher Hero described a primitive turbine in the second century B.C. This turbine consisted of a hollow sphere mounted between two bearings. The sphere was partially filled with water and placed over a fire. The steam escaped from two bent tubes fixed at opposite sides, and the reaction of the steam caused the ball to rotate. Hero's machine was only a toy, but it worked well and formed the earliest-known use of steam for the production of motion. Nothing further was done until Branca, an Italian architect, constructed—in 1629—a machine in which a jet of steam from a boiler impinged on a wheel and caused it to rotate. Many inventors worked at the problem until, at the end of the eighteenth century, Watt invented the steam reciprocating engine of to-day, in which steam acting on a piston imparts a rotary motion to a wheel. Nothing further of any real value was done until 1884 because during that period inventors were too busy perfecting Watt's steam engine.

The first turbine brought out by Parsons had a capacity of only 6 horse-power, and was used for driving a small electric generator. The successful introduction of electric lighting about that time created a demand for good high-speed steam engines for driving electric generators, and thus gave an immense stimulus to the study of the steam turbine.

A turbine may be defined as a machine in which rotary motion is obtained by the gradual change of the momentum contained in the fluid, which may be either steam or water. Essentially the steam and water turbine (or water wheel, which is familiar to everybody) resemble one another. Steam, however, is a highly elastic fluid, and water is not, and this fact renders several modifications in design necessary. Steam and water turbines are divided into two classes—reaction and impulse. In the reaction type, of which Parsons is the best known, the steam passes alternately through many rings of fixed and revolving blades, and expands slightly during the passage through each ring, at the same time imparting its energy to the movable blades. In the impulse class the steam is passed through special nozzles, in which the steam expands and attains a very high velocity. It then impinges on the blades of a wheel, which is set in motion.

The steam turbine is, therefore, a very simple machine, depending for its action entirely on the physical properties of steam. It was essentially developed for driving dynamos to generate electrical energy. The great difficulty which had to be overcome in the early turbines was the excessive high speed, but Mr. Parsons, after several attempts, found that the most practical method of keeping down the speed was the application of "multiple stage expansion." This is the combination of several small successive turbines, which together form one turbine, the steam passing through all

(Continued on page 392)

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A PARABLE OF PARA.

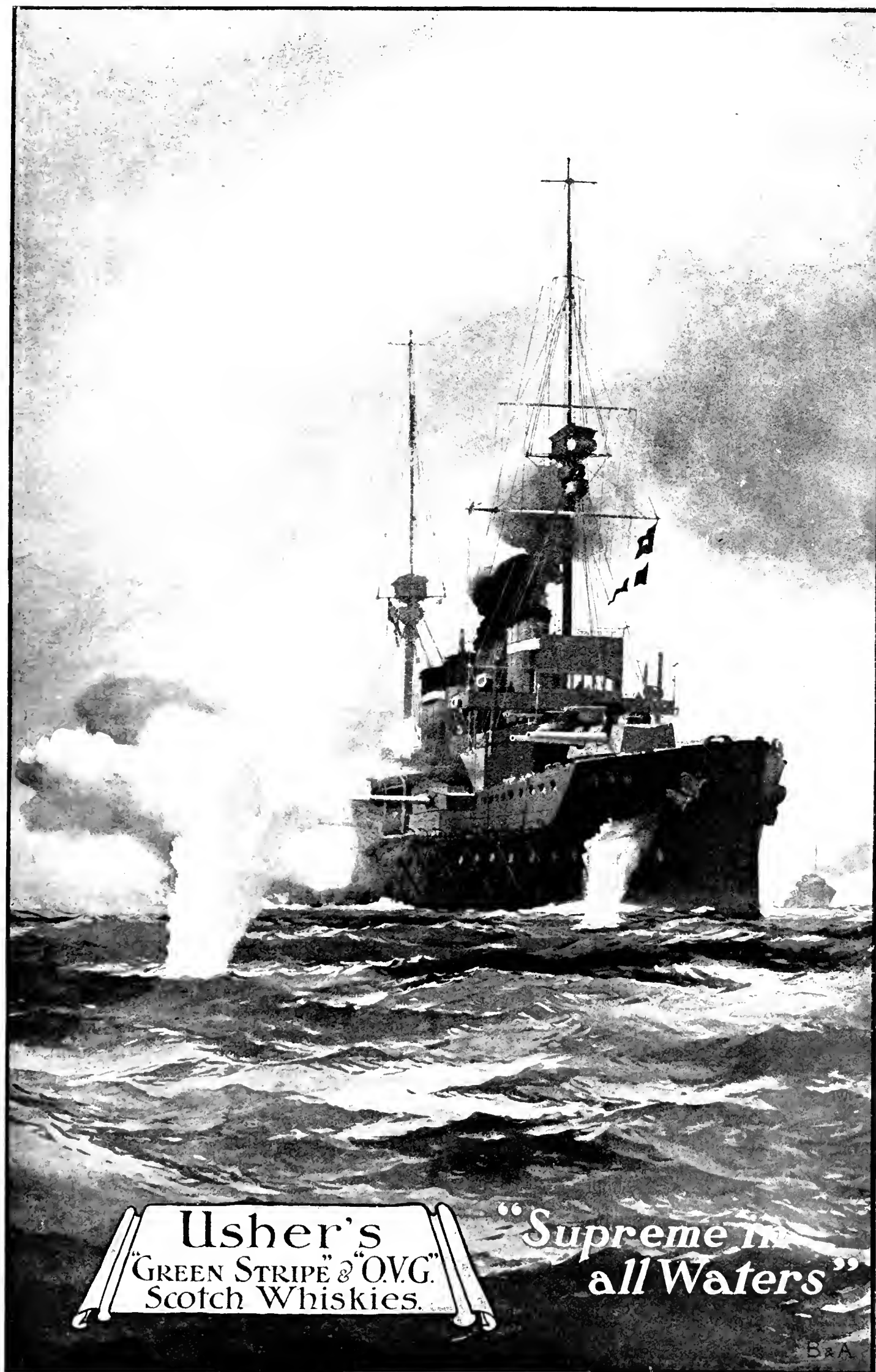
The tale of the man who bought not wisely but too well.

CHAPTER THE SECOND.

NOW it came to pass that the two travellers were delayed on their journey. "Look!" cried he who had bought wisely; "thine ass has cast a shoe." And it was even so. So they tarried awhile, and he who had bought too well shod his beast with a shoe that he had to spare. And the wise man smiled again in his beard, and they continued on their way, the one with the other. And behold the way was exceeding rough, and they were yet again delayed. "Look, friend, thy beast has cast another shoe!" And it was even so. So he shod his beast with yet another shoe, but was sore distressed, for the way was long and hard, and he felt not safe. And they continued on their way, the one sore troubled in his mind, and they spake not the one to the other. *(To be continued.)*

MORAL:—Depend not on quantity but quality.

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(Established a century.)

the elements. After the first difficulties had been overcome, and engineers began to be less sceptical, it did not take a great deal of time to make the steam turbine a great success. The chief reason was that it was proved beyond doubt that the turbine exceeded the best type of reciprocating engine in steam economy.

The success of the Parsons turbine on land led, in 1894, to the formation of a company for applying the steam turbine to marine purposes, and the famous *Turbinia* was built—a small boat 100 feet long, 9 feet beam, and a displacement of 44 tons. The early experiments were disappointing because the speed obtained was low. After several experiments it was found by Mr. Parsons that the speed of the propellers was much too high, due to the high turbine speed. By redesigning the propellers and the turbine machinery to enable a lower propeller speed to be obtained, success was attained in 1896, when speeds exceeding 32 knots were obtained—a wonderful result for such a small vessel. By dividing the turbine into three separate ones, the steam doing work successively in each one, each driving a separate propeller, the speed of the turbine was much reduced, with a consequent increase in the propelling force. As a turbine cannot be reversed, a special astern turbine was installed on the centre shaft, which runs light when the vessel is moving forward.

In 1898 the Admiralty ordered the ill-fated destroyers *Cobra* and *Viper*, having a displacement of 370 tons and 390 tons respectively. The turbines were arranged somewhat differently than in the *Turbinia*, there being four turbines in each boat—two high-pressure and two low-pressure ones—each driving a separate shaft. Remarkable results were obtained with both vessels. With the *Viper* a speed of 37 knots was obtained on the measured mile, and the *Cobra*, on a three hours' trial, steamed at an average speed of 34.6 knots.

Unfortunately, the *Viper* was wrecked near the Channel Islands in August, 1901, and in September of the same year the *Cobra* was lost in a storm in the North Sea. These disasters had nothing whatever to do with the turbine installation. Experience with these vessels had shown that at high speeds the steam consumption was less than in boats

fitted with reciprocating engines, but that at low speeds the steam consumption was rather greater. In the next destroyers—the *Velox* and the *Eden*—special "cruising" engines were installed. In the *Velox* two sets of reciprocating engines were installed to be used when steaming at about 12 knots, while in the *Eden* two small turbines were installed for a similar purpose.

In 1902 the Admiralty decided to use steam turbines in the *Amethyst*—one of four third-class cruisers then building. The three other ships—the *Topaz*, *Diamond*, and *Sapphire*—are of exactly the same dimensions and form of hull, but were fitted with the best type of reciprocating engines, so that an excellent opportunity occurred for exact comparative trials. These light cruisers have a displacement of 3,000 tons, and were designed for a speed of 21½ knots. The *Amethyst* was fitted with two cruising turbines, one of the high-pressure and the other of the low-pressure type.

(To be continued)

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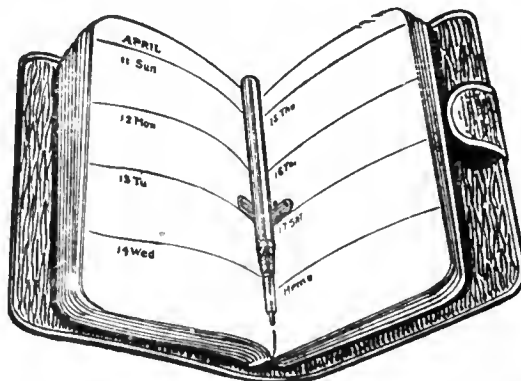
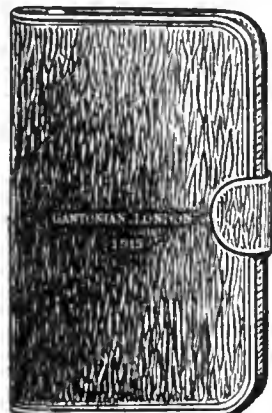
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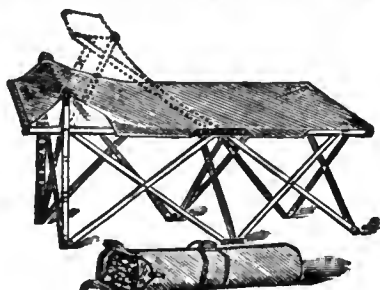
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CONTENTS.

	Page
ATHLETICS	78
AVIATION	65
BILLIARDS	61
BOXING	81
BRIDGE	75
COURSING	61
CRICKET	25
CYCLING	88
DAILY WANTS DICTIONARY	8
DISTANCES (Comparative Tables of French and English)	—
FISHING	57
FOOTBALL (Association)	34
FOOTBALL (Rugby)	40
FRENCH OWNERS' COLOURS (with English equivalent)	—
GOLF	43
HOCKEY	45
HUNTING	57
LAWN TENNIS	48
LIGHTING-UP TABLE	74
MOTORING	71
NEWMARKET COURSES (Lengths of)	—
OLYMPIC GAMES	39
POLO	60
ROWING	82
SHOOTING	57
STARTING PRICE READY RECKONER	54
SWIMMING	85
TURF	49
WEIGHTS (Comparative Tables of French and English)	—
WRESTLING	84
YACHTING	84

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AND
LAND & WATER

Vol. LXV.

No. 2760

SATURDAY, APRIL 3, 1915

[PUBLISHED AS
A NEWSPAPER.]

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A
PARABLE
OF PARA.

The tale of the man who bought not wisely but too well.

CHAPTER THE THIRD.

AND in a little while they came upon a village, and he who had bought too well sought out the smith that he might provide him with yet another shoe, for he had none left. And the good smith said: "Yea, master, shoes can I sell thee, but not of this fashioning. Doubtless could I procure the shoe thou desirest, but since thou canst not wait awhile 'tis all I have to offer. See, thy friend's beast is so shod, and thou sayest he has had no misadventure." And the wise man said: "Take thou the shoe and come with me to a place where we may rest, and I will enlighten thee as to the tale of this shoe."

(To be continued.)

MORAL:—

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THROUGH THE EYES OF A WOMAN

By MRS. ERIC DE RIDDER

The Gentle Art of Argument

WHAT an argumentative race we are becoming! We can argue almost every hour of the day about some controversial point or another. Even those people who never had an opinion of their own—or if they had were too timid to voice it—have rushed into the fray. Should racing continue as usual, ought there to be such a thing as fashion, should we have conscription, is the censorship too strict, or, on the other hand, ought we to have no news at all? Everybody has different opinions; nobody is shy about making them heard. Many people have no wish to listen to anybody's ideas but their own. The result is that every one is talking at once, and many a gathering that set out to be a quiet and friendly occasion has come to a very strained close. To my way of thinking, people with determined views and penetrating voices ought to come under military discipline. They take an unfair advantage of the helpless mortal placed next to them at the luncheon or dinner table. There is no getting away. The martyrdom must be endured for at least an hour, and often longer. And the worst of it is that the people who talk most are those who know least. The information is never first hand. They have always heard some wonderful story from somebody who knows somebody else, whose cousin has the key to all these secrets of State. The amazing tale is launched; some equally intrepid soul, with an equally rasping voice, challenges it. Then argument is let loose. Some people talk all the time, hardly daring to draw breath in case their flow of ideas should be interrupted; others take advantage of anything approaching a lull. There is more than a hint of flat contradiction, there is certainly a growing acidity of tone. Somebody with a noble effort of tact manages to change the subject. All is peace for a few minutes and then, alas and alack! we are on the rocks of controversy again, though nobody can tell how exactly it has come about. It is really enough to put an end to all attempts at hospitality. We can never be certain that our guests will not come to metaphorical blows over one or another of the burning questions of the day.

On Talking and Thinking

The truth is that the war has made everybody think harder than they have ever done in all their lives before, and everybody has an opinion of their own. To some this is such a novel experience that they burst into argument as easily as a bird bursts into song. The worst of it is that from an arguer to a bore is a very small step. Also, that the habit of argument grows, until it becomes an almost mechanical one. We surely do not want to emerge from this war professional controversialists. It would be a bad omen for future peace, even when this present clashing of arms has ceased.

"Do you know, I have really got into a positive habit of saying 'I don't think so at all,'" said an attractive Irishwoman to me the other day.

"But I thought you never argued," I said, hoping that this charming trait in her charming self was not to be totally abashed.

"Well, I never have till now," she admitted, shaking a pretty head upon which one of the new veiled sailor hats was prettily poised. "But since we crossed to England I have done nothing but argue. I have argued till I am hoarse. I

have argued about Ireland. I have argued about Bosnia. I have argued about every stone of Constantinople, though I don't know it, and have never been near the place. I have even talked about war and warfare with a wounded warrior, and shrieked contradiction into his ear till my voice went."

"How lucky for him," I murmured in the traditional stage aside.

"I don't think so at all," said she; then stopped and laughed.

"No," I said, after a befitting pause, "as a matter of fact, neither do I."

"Besides," said my friend, wrinkling up her nose in a way she alone amongst women can make attractive, "he was really only very slightly wounded!"

The Invaluable Motor Car

One of the most unostentatious yet one of the most useful forms of work is that being done by the Ambulance Column of the London district. The idea of this Column originated in the days before war, when some far-seeing people were working at Red Cross training and often getting laughed at for their pains. It is an entirely voluntary work, carried out by means of motor ambulances and private motor cars. The object is to meet the trains of wounded as they arrive at the London stations, and convey them from thence to the various hospitals. A fleet of private motor cars under the Column's direction have conveyed numbers of sick and wounded men, ever

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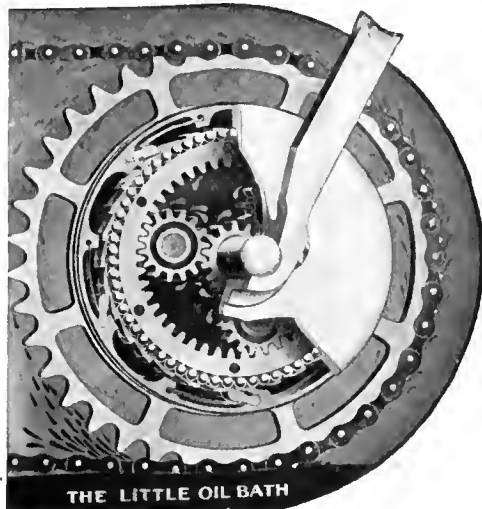
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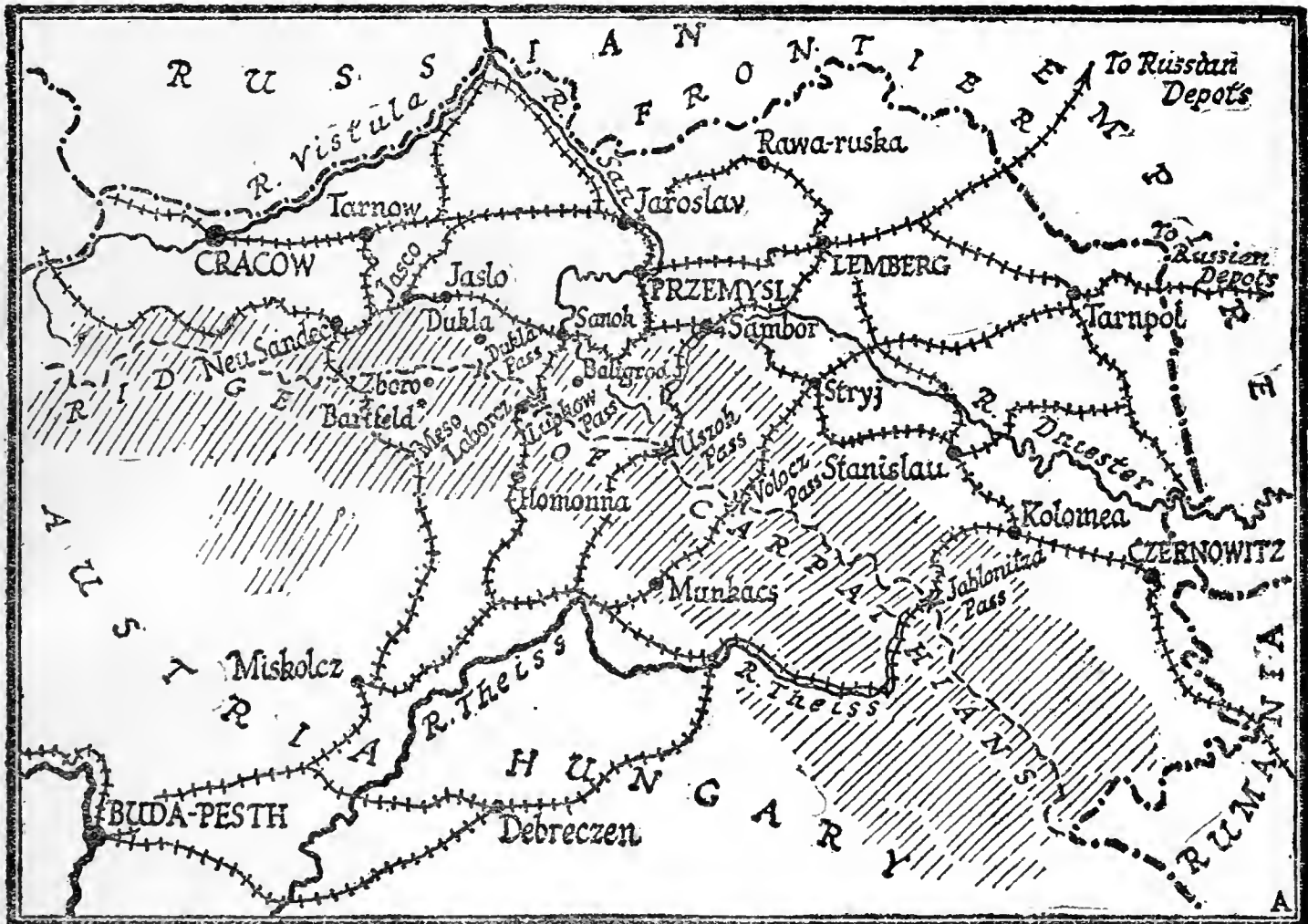
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THE WAR BY LAND.

By HILAIRE BELLOC.

NOTE.—This article has been submitted to the Press Bureau, which does not object to the publication as censored, and takes no responsibility for the correctness of the statements.

In accordance with the requirements of the Press Bureau, the positions of troops on Plans illustrating this Article must only be regarded as approximate, and no definite strength at any point is indicated.



THE CARPATHIAN FRONT.

The Russian Advance, the Uzok and the Lupkow Passes.

IT not infrequently happens in the course of a campaign that what had been, sometimes over a considerable period, a secondary field of operations, becomes a field of first importance, success or failure in which proves decisive. There seems some possibility of this being the case in the future with the Carpathian front.

Upon the whole Eastern front Warsaw was, and is, the critical point. With the Germans in Warsaw (especially with Przemysl still holding out), the Galician operations—hitherto stationary—would have failed altogether, and a retirement of the Russian armies from the plain east of the Carpathians would have had to come.

But with Warsaw untaken, and, apparently, now in no danger of falling during the immediate future, and with the interruption of Przemysl gone, it is quite another matter. Northern and Central Poland may well stand immobile while more decisive operations take place in Southern Poland; and at the outset of these operations we shall do well to master the general and the particular conditions of that Carpathian front, where a great action has been at issue for more than a

week, and still at the moment of writing (Monday evening) (1) remains undecided.

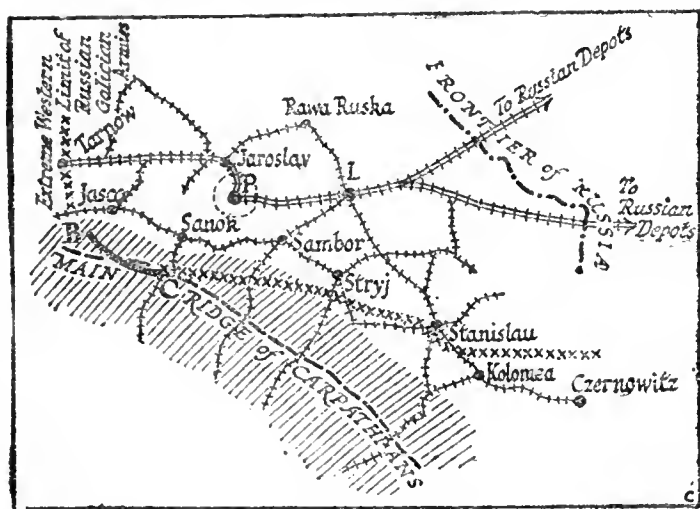
The general conditions of the Carpathian front may thus be summarised. A broad belt of mountain land, running roughly north-west by south-east, and, for the purposes of this field, about 250 miles long, or a trifle more, stretches from the Roumanian frontier to the sources of the Dunajec river above New Sandec. This line of the Dunajec river, prolonged by an upper tributary coming in from the south, roughly defines the extremity of the Russian occupation in Galicia. It will be observed that this front (which I have marked on the sketch B with a line of crosses stretching from A to B) menaces Cracow, at a distance of rather less than fifty miles upon the average. The Russian armies occupying the Galician plain to the east of the Carpathian mountains have been pressed back in the southern end of their occupation to, roughly, the line of crosses C D, and are in possession of the crest of the Carpathians only upon the narrow issue between B and C. But it is further to be remarked that this particular section of the front B C is precisely that in which the Carpathians can most easily be crossed and where there is the best system of communication immediately to the east on the Galician plain for the support of an effort

(1) The exigencies of the press in the holiday week advance the writing of this issue by twenty-four hours.



at the invasion of Hungary in the direction of the arrow.

When we come to the closer analysis of this section of the front in detail, we shall see how important this point is. So long as Przemysl held out the railway system at the disposal of the Russians in the Galician plain, though close and sufficient for the supply and movement of very great numbers, was interrupted. Przemysl, as we saw last week, made a great hole in the railway system of the plain, and in particular cut that main line which is the backbone of all the Galician communications, and which is the principal avenue for Russian supply. This truth can, perhaps, best be expressed by the addition here of another slight sketch in which this railway system is expressed in its relation to the front of effort we are considering. The double line marks that main avenue of communications of which I speak, and just east of Lemberg, L, it splits into two branches, crossing the Russian frontier and leading to the main Russian depôts in the South and East of Russia, Lemberg being itself, of course, a large advanced base. The lesser railways I have marked with single lines. Now Przemysl, at P, so long as it held out, caused an interruption roughly represented by



the circle of dots set round it on the sketch. The provisioning of the Russians further west could, indeed, be effected round by Rawa Russka, to the junction of Jaroslav, but it was a small and inconvenient line, and further the great masses of men immobilised to maintain the siege of Przemysl had to be provided for first. The line which runs laterally to the foothills of the Carpathians through Jasco, Sanok, Sambor, and Stryj, to Stanislaw, was everywhere quite close to the Austrian effort,

the Russian front upon this southern side running as do the crosses on the sketch. Until Przemysl fell the Russians were therefore grievously hampered in their movements of men.

Once Przemysl had fallen, however, the whole railway system was free, and all parts of it north of this lateral line were at the Russians' disposal. It seemed uncertain what use the Russians would immediately make of their new opportunity. But the most obvious and immediate advantage provided for them by the fall of Przemysl was to attack along that crest B C where they already commanded one principal pass across the range, and where they were already so far advanced towards the mastery of the ridge immediately to the south. This sector B C lay in the immediate neighbourhood of Przemysl, the quarter of a million of men or so released by the fall of the place could be brought up at once, and the striking of a blow here for the forcing of the Carpathians was easier than an advance elsewhere—as against the Cracow front or towards the Bukovina. It would carry more weight and could be delivered at once.

To this plan, therefore, the Russians seem to have turned, and they are at present engaged in attempting to master a sufficient belt of the main ridge to enable them to advance when the weather serves down on to the Hungarian plain.

This belt, the front upon which they are now fighting, may be defined by two extremities, Bartfeld, the local name for which is Bartfa, and sixty miles off to the east, upon the other side of the crest of the mountains, Baligrod.

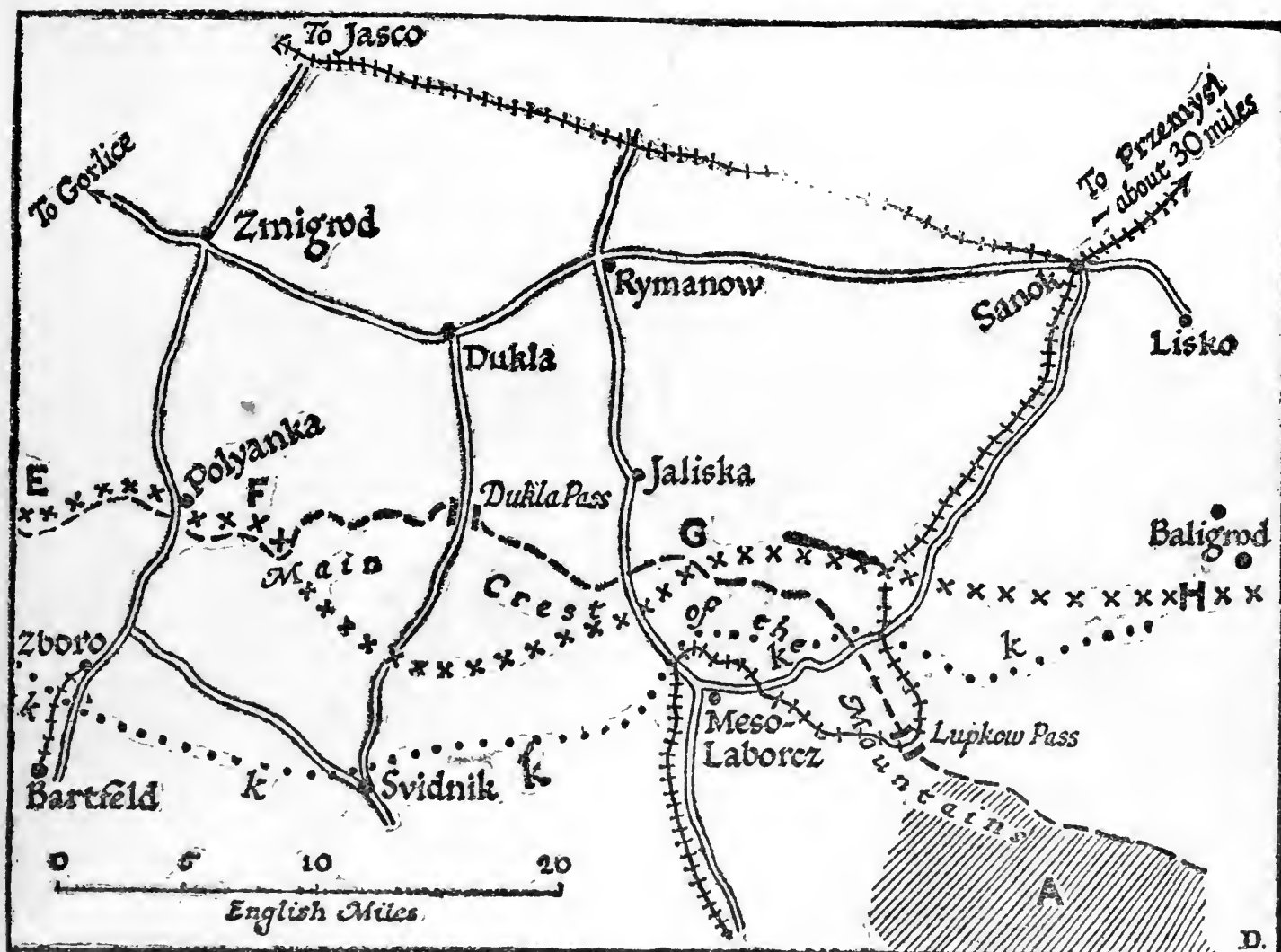
It is these sixty miles the conditions of which have to be analysed.

First let us examine the advantages of communication, which the Russians here enjoy over their opponents. (Plan D).

The base of the whole thing is the lateral railway running in front of the foothills on the Galician side, from the junction at Sanok towards Jasko. At Sanok comes in the railway from the Hungarian side, which crosses the ridge of the mountain by the saddle known as the Lupkow Pass, where also a good road—hard, broad, and excellently engineered—crosses the mountains upon a line almost coincident with that of the railway. Three other roads, which have no railway corresponding to them, also cross the mountains in this region: that passing by Jaliska and starting from Rymanow, that starting from Svidnik and going over the Dukla Pass to Dukla, and that starting from Bartfeld (with the railway accompanying as far as the station of Zboro) and leading to Zmigrod. All these communications crossing the main ridge of the Carpathians are easy, and, as the map shows, they stand close together, permitting of the advance of parallel columns in support one of the other. The country is fairly open, the heavy woods not beginning until the shaded area marked A upon the right of the sketch. The passes are quite low. The Lupkow Pass is not a thousand feet above the towns of the foothills, the Dukla only 500, and this last height is but little surpassed by the summit of the Jaliska and the Zmigrod roads upon either side.

Further, a most important point, there is a good lateral road running from Sanok to Zmigrod, and serving the terminal of each of these avenues of advance.

The situation of the Russians upon this Bartfeld—Baligrod front, before the fall of Przemysl



on the 22nd March, seems to have been somewhat as follows. The Russians held the whole of the ridge over a line of about ten miles from E to F. From about F their line bent outwards on to the southern slope of the Carpathians so that they securely held the low and broad Dukla Pass, and it would seem that the line did not reach the crest again till somewhere about the point G; so that the salient on to the Hungarian side of the mountains, the grip upon the passage of the crest, represented nearly twenty miles. The telegrams are too meagre to make quite certain upon this point, but I deduce from the news of the fortnight before the fall of the fortress that the Jaliska road was commanded just beyond the summit. Beyond G the line ran to some such point as H, with Baligród either just within or just without the limits of the Russian occupation. At any rate, it is quite certain that both the summits of the railway and of the road on the Lupkow Pass were still in Austrian hands last Friday.

After the fall of Przemyśl, a week ago, this Baligród-Bartfeld front was immediately reinforced, and the effect of this pressure was immediately felt. The Austrian retirement began down the slope towards the Hungarian plain. Heights dominating the Lupkow Pass on the ridge were carried by the Russians. We have not yet got any sufficient accounts to justify our saying that the Russians command the road and the railway itself, where they cross the ridge of the Lupkow Pass, but we can safely put the Russian line upon last Friday, the 26th, the third day after the entry of the Russian troops into Przemyśl, at the new front indicated by the dots K, K, K upon the sketch just given. We know that the Austrians have evacuated the point of Zboro, that the Russians are just above Mesolaborecz, and that they

are forcing the positions in the immediate neighbourhood of the places where the road and the railway from Sanok to Mesolaborecz cross the ridge close to the village of Lupkow.

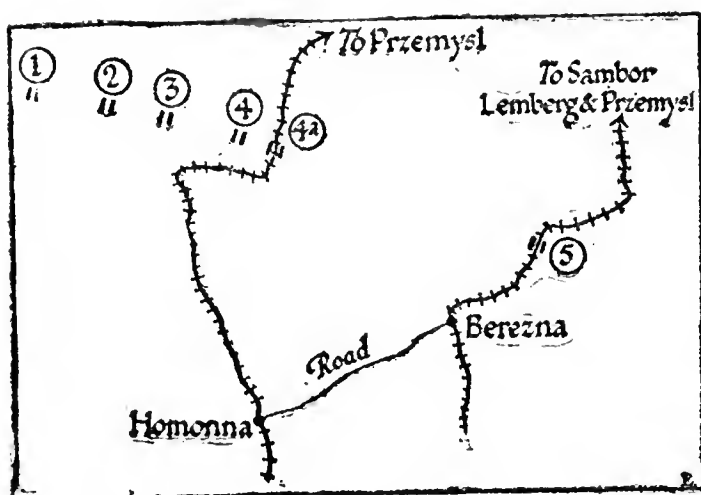
It is perfectly clear that the whole Russian effort is directed towards the piercing of this "waist" of the Carpathians, and the occupation of all the roads leading down on to the Hungarian plain upon a belt of some fifty miles. What we have to watch in the next few days is the progress our allies may make in this effort.

It is worth noting in this connection that the concentration upon the Bartfeld-Baligród sector leaves deliberately neglected for the moment the next railway pass across the mountains, the Uzok, and I would beg my readers' attention to some digression upon this momentary neglect of the Uzok, because it is important to the strategy of this move.

We all know that a modern army is dependent upon the railway. Now the Russians, making this effort across the Bartfeld-Baligród front alone, will, even if they are successful in reaching, with a short delay, the plain upon the further side, depend upon only one line of railway, that crossing the Lupkow Pass.

It may be that as further reinforcements come through the now liberated Galician railway system, an attack will be made upon the Uzok simultaneously with the attack upon the Lupkow.

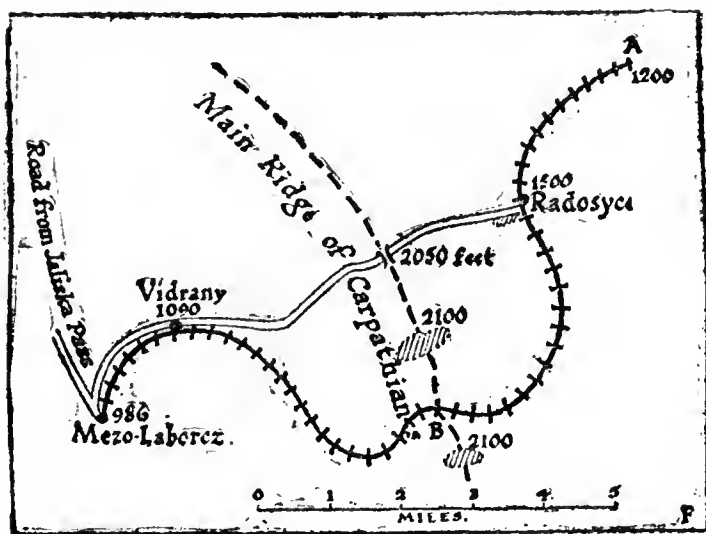
The two lines stand one to the other in the fashion shown upon the accompanying elementary sketch (E). The three road passes, Polianka, Dukla, and Jaliska (marked (1), (2), (3) upon the sketch), are succeeded next in order by the road pass (4), and the railway pass (4A), which go by the common name of Lupkow. At a distance beyond the Lupkow of some forty-five miles, another more



recently-built railway crosses the crest near the hamlet of Uzok (5), and proceeds down upon the Galician side to Sambor, and so beyond to Przemyśl (like its neighbour, through the Lupkow), and by another line to Lemberg. These two railway lines mastering the range do not meet until far down on the Hungarian Plain. There is a fairly good lateral road leading along the Hungarian side of the foothills from Homonna to Berezna, but there is no railway communication.

If the Russians, therefore, content themselves with trying to force the Lupkow and obtain possession of the railway communication over the crest at that point, they will be relying upon the Austrians having to abandon the Uzok (5) (the crest of which they still command) on account of the fear they will feel of the appearance, sooner or later, of Russian forces behind them upon the Hungarian plain. The Russians cannot move in any great force in Hungary without a railway. To command the Lupkow alone would not be enough; they must, for a general movement, ultimately command the Uzok, too. But, supposing they do not force the Uzok, they can have no hope of obtaining it save by the threat of this lengthy turning movement.

Now, there are excellent reasons, in spite of the inconvenience of working with a single railway, for leaving the Uzok alone and concentrating upon the Lupkow for the moment. It is not conceivable that the Uzok will be left altogether alone, supposing that the Austrians cling to it obstinately in spite of the threat to their rear. It is only a question of time for the Russians to bring up sufficient reinforcements to permit them to act upon the Uzok as well as upon the Lupkow; but for the moment it would seem as though the Lupkow were their principal objective, and a detailed examination of the two passes shows why.



The Lupkow is roughly thus. The railway, having come up a very easy valley from the Galician side, enters its last gradient towards the ridge at a point rather more than 1,200 feet above the sea—at a point marked A in the sketch. It only rises some 240 feet more to Radoszyce, and thence to the summit at B, the total rise is but just over 300. Upon the further side the gradient is slightly steeper, Vidrany being only just under 1,100 feet and Mezolaborecz under 1,000.

At the summit there are two short tunnels, the longest of which is barely 400 yards, and the crests in the neighbourhood are quite low—2,100 feet or thereabouts. Therefore the destruction of these tunnels (which are rock tunnels) should be repaired without too much difficulty, and the heights in the neighbourhood (some of which are already carried) are neither steep nor elevated.

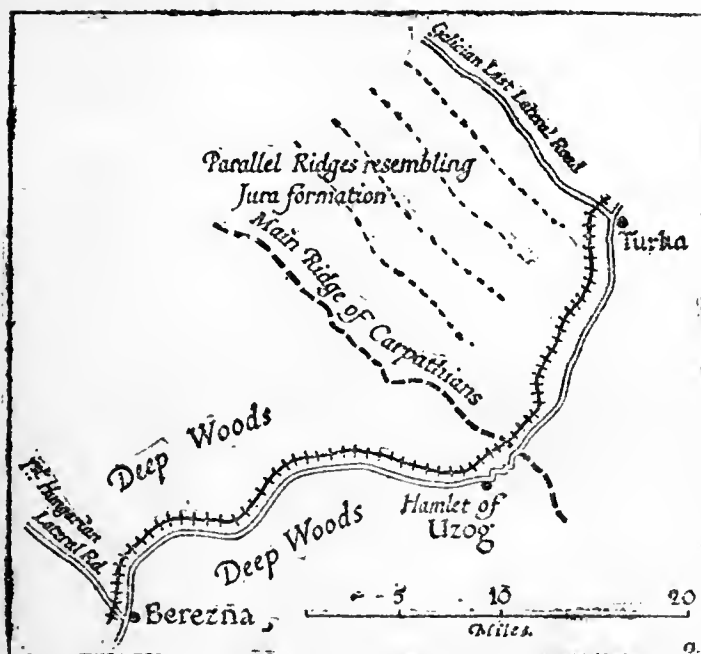
There are no considerable viaducts or long bridges. Lastly, and most important of all, the railway pass is easily turned by road. One road turns it in its immediate neighbourhood, running from the village of Radoszyce, on the Galician side, to Vidrany on the Hungarian side by very easy gradients, over a summit but slightly exceeding 2,000 feet. The other road coming in from the Jaliska Pass (which we have seen to be already in Russian hands) strikes the railway just beyond Vidrany at Mesolaborecz, and turns the railway line yet again. It should be impossible for the Austrians to command the railway summit if or when these roads are in the Russian possession. And it should equally be impossible for them to inflict any very permanent injury upon the line which here crosses the range.

Further, let us remark that the country all about here is open, with only isolated woods; and the formations, though of limestone, not craggy or particularly lending themselves to local defects.

Lastly, the height of this Lupkow saddle is so inconsiderable that it is already only patchy with snow, and the snow will be no serious encumbrance before the end of the month if the season is reasonably open.

Now, with all these conditions, those of the Uzok Pass form a complete contrast.

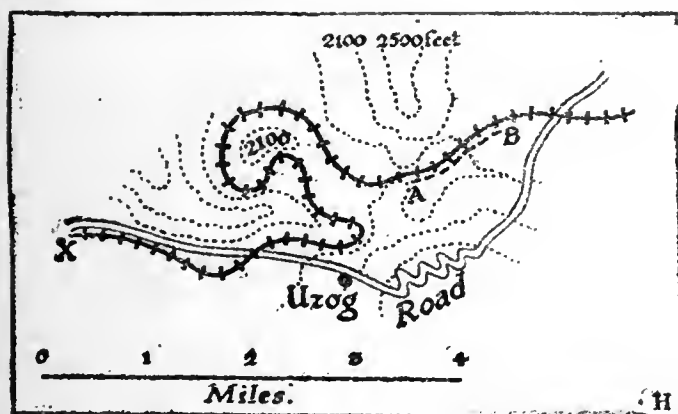
In the first place, the Uzok Pass, being in the heart of the mountains and away from the central "waist," stands higher; though that is not an important point, for it is less than 3,000 feet above the sea. But it is also far steeper from Turka, the mountain town at the Galician foot of the Uzok. The rise to the summit is over a thousand feet, and on the further side the road presents all the character of a true mountain pass, zig-zagging down towards Hungary, on to the hamlet of Uzok itself. A few miles further it has fallen (following the upper torrent reaches of the River Ung) by nearly 2,000 feet, and is still a mountain road when it enters the larger flat above Berezna and there receives the lateral road coming from the Lupkow Railway and Homonna. Again, dense masses of wood on the Hungarian side clothe the mountains everywhere in this part; beech on the lower slopes, pines climbing up thickly to the central road. On the further, Galician, side, from which the Russians must approach, there is but bad lateral communication for the massing of their troops. The mountain formation here resembles that of the Jura. It runs in parallel ridges, crest upon crest, of which the main ridge of the



Carpathians is only the last: and such formation admits of no easy system of communication. The last lateral road by which a Russian concentration against the pass can be effected comes in on Turka itself. The forcing of the pass, therefore, cannot be aided by the advent of bodies arriving from either side. It can be accomplished only by direct attack on a very narrow front. Nor is the line of the railway turned upon the further side until we reach the road from Homonna, which comes in as low down as Berezna, nearly two days' march from the summit.

For more than three days of very good marching, and more like four average days, troops attempting to force the Uzok Pass are tied to a single road of a true mountainous character. When we return from this general character of the pass for road and railway alike, to the railway alone, the ease of its defence or destruction, and the corresponding difficulty of its seizure are also apparent.

A detailed sketch of the railway crossing is somewhat as follows:



At the summit itself a tunnel of a mile, between A and B, vulnerable from its length, difficult of repair if it were destroyed, meets one.

Immediately beyond the summit upon the Hungarian side the railway is compelled, from the steepness of the ground, to turn and loop in true mountain fashion, continually passing through short tunnels and over not inconsiderable ravines. At every such point a retiring enemy could cut it, while the fall on the Hungarian side is so steep that by the time the railway has reached the neighbouring point X it has already fallen nearly 2,000 feet from its summit.

The Uzok, therefore, is a railway pass far less capable of rapid seizure and use than is the

Lupkow. Nor is it remarkable that the line was not carried across the Uzok at this point until many years after the engineers had thrown a railway across the Lupkow.

Before leaving this front it must be premised that a very rapid advance is unlikely until the spring weather liberates the roads completely.

The present effort of the Russians is rather to master the summits and to open the gates into Hungary than to pass through those gates in force. Though, if they succeeded in capturing those gates, the advance into Hungary would hardly be delayed beyond the month of April.

It is worthy of remark in this connection that the Austrian manœuvres—I think three years ago—turned upon the thesis of the defence of the Hungarian plain under conditions presuming the loss of Przemyśl and the loss of the main range. It is generally believed that the lesson drawn from those manœuvres was that a crescent position taken up along the western foot of the mountains could not be held, save with the aid of strong reinforcements from the north.

Now it is fairly certain that the enemy could not find heavy reinforcements from the north in the case of a Russian advance. If Austria and Germany had been fighting Russia alone, and if Russia had attained her present position in such single combat, one might imagine such reinforcement to be possible; but Germany would not be in a position to throw considerable numbers into this field in aid of her ally with Warsaw untaken and with the siege conditions, with Germans to their trenches in the west, unbroken.

We have been many months expecting the ultimate effect of Russian numbers. Their supposed immediate effect was a grave error of judgment, and the delay under which they would begin to tell was far longer than opinion was led to believe in this country by most military critics and by all public men. But it was an ultimate factor, bound to come into play if the enemy could obtain no decision in the East and should let month after month slip by without pinning or decisively defeating his opponent in that quarter; and it would seem as though, with the fall of Przemyśl, this double element of time and of numbers in favour of the Allies were at last beginning to tell upon the Carpathian front.

PRZEMYSL.

The further news and details following upon the capture of Przemyśl, lacking which we remarked last week that it was impossible to state the full effect of that achievement, are not yet to hand. The only definite figure we have to go upon is a quasi-official statement that the total number of prisoners was 120,000. The estimate of 100,000 was, therefore, not so far out, and, indeed, it should be clear that the defence of so large a perimeter as from thirty to thirty-five miles could hardly be undertaken with a smaller number of troops. We are also told that the total number of Russian prisoners found within the fortress was about 3,000, and, further, that the greater number were, as was to be expected, cases of wounded.

Of captures of material, only four locomotives were seized, apparently intact; but of other rolling stock a very great quantity, and a certain stock of coal. Of the fate of the guns we have heard nothing as yet.

It is clear that the least number of men set free on the Russian side by the fall of the fortress

cannot be less than a quarter of a million, which estimate has been used in the above notes upon the present Carpathian position.

It is further clear that no considerable destruction of the railways of which Przemyśl is the junction can have taken place, because the movement of troops began almost immediately after the entry of the Russian forces into the city.

The main interest of the siege can only, it is to be feared, arise much later, when full details of its character are published. What military students in the West really want to know is whether the power of prolonged resistance which Przemyśl showed was due mainly to the organisation of temporary works outside the inner ring—as at Verdun and Metz—or whether it was mainly due to the absence of a proper siege train on the Russian side. It is fairly evident from the very brief notices received that the fortress, when it did fall, fell from exhaustion, and not from bombardment or assault. Therefore, if Przemyśl held out of its own strength against regular and developed siege attack, it would go far to show that the opinion formed at the beginning of the war, that the modern siege train has destroyed the modern fortress, must be revised. That the modern siege train can, with superiority in air craft, destroy the *restricted* permanent work, and that in a few days, is now a commonplace. But it by no means follows that fortresses cannot be devised for the future which shall be possessed of very numerous mobile batteries, in only *some* of which guns need be placed (and which these were the enemy would have to find out for himself), while the opportunity should be afforded for the completion of still more numerous temporary works at short notice. What dooms the permanent work as we now understand it is the restricted and *known* area upon which the high explosive shell of the assault has to work. Once eliminate or modify the two factors of *restriction in area* and *known site*, and the strength of the defence may be revived.

Another matter of interest would be to discover what was the sanitary condition of Przemyśl at its fall, what was the proportion of death from wounds and what from disease, as also the organisation of large sorties under modern conditions.

But for all this we must wait until detailed news arrives.

THE WESTERN AND OTHER FRONTS.

There has been no news of consequence this week up to the moment of writing (Monday evening) upon the Western front.

The Hartmannsweilerkopf, a wooded height of over 3,000 feet in the Vosges, which stands boldly out from the foothills and dominates the whole plain of Mulhouse, has been recaptured by the French. Here, as nearly always, the French are silent upon the number of their prisoners.

The Belgian troops have achieved two slight successes upon the Yser. The trenches captured by the French south-east of Verdun at Les Éparges, just at the base of the hills called the Heights of the Meuse, were in part retaken by the enemy on Sunday, and were then almost entirely recaptured by the French before the end of the day.

In general the mass of local attacks upon various parts of the 400-mile line does no more than continue the series of these during the last winter months. The choice of assault remains almost always with the Allies; the object of attrition remains the same.

An insignificant skirmish took place towards the Suez end of the Suez Canal. Of its nature we can guess nothing except that it can have dealt with nothing more important than reconnaissance. The enemy retired towards Naklal, half-way to Akaba.

On the East Prussian front we have very brief news describing fairly heavy fighting, especially at the western end of the line between Mława and Płock. But there is no appreciable change of advance or retreat in the opposing lines that face each other from the point where the Niemen enters East Prussia to the Vistula. It is probable that this immobility is principally due to the spring thaw, which turns the whole of these marshy districts into an impossible sludge. The bombardment of Osowiec still continues in desultory fashion, and has now entered its sixth week. There is no result apparent.

A REVIEW OF THE GERMAN MIND UPON THE WAR.

IT is important from time to time, even in connection with the mere dry bones of military study, to review the mental attitude of the enemy.

The conclusions in this field are not susceptible of positive proof.

Evidence is at large, and may be variously interpreted, but one cannot forgo periodical judgment of the matter, because it is ultimately upon the moral attitude of the two opponents that a campaign depends, and the moral attitude of the enemy at particular critical moments helps us to gauge the development of the phase succeeding.

Such a critical moment is approaching. The end of winter, the enemy's continued heavy wastage, his limit of reserves, the new contingents about to appear in the West, all determine this; and it is advisable to take stock now of the enemy's

mind, from the opening of the campaign to the present apparent change in his moral attitude.

The mood in which Germany, controlling also her powerful ally, began the war is by this time a matter of history.

The enemy possessed an instrument of war amply sufficient for victory (in his opinion), according to the plan he proposed—a plan, in his opinion again, morally reasonable; and, as a military operation, so practicable as to be certain of success.

He had not used this instrument for aggression, he had not used it even (save quite recently) to threaten; but he knew that it was ready to use whenever he chose, and the moment for using it at last arrived.

If we desire to grasp this simple attitude common to the directing minds in Germany, we

cannot do better than recall the attitude of similar men in this country towards the position of England at sea. Consciousness of superior strength did not here produce aggression. It does not necessarily mean aggression. It always produces a party which would like to use such advantage actively, but, especially after a long peace, there will be stronger counsels against the running of the slight risk involved and for letting well alone.

We know that the higher authority in Germany was for many years against action.

But there was this great difference between the two parts of the parallel here drawn. The British fleet had one aim only, to defend an amply sufficient national patrimony long acquired. Whereas the German forces, though conscious that time was with them (for the numbers and wealth of the German Empire were rapidly increasing), were in the hands of men who felt two things which might move them to action at last: First, that Germany had not her due, especially in the matter of Colonial expansion; secondly, that Russia, which was in proportion increasing even more rapidly than Germany, might ultimately become dangerous. Against the Slav spirit as a whole the German spirit is arrayed in a mixture of contempt and fear difficult for the West to understand.

Rather more than three years ago elements provoking action began to outweigh the conservative factors in the German directing mind. The ultimate cause was, of course, the change in the attitude of Britain, which had, in its turn, been due to the German threat by sea. Germany had chosen to build a great fleet, manifestly designed to challenge that of this country.

The immediate action was the French move towards Morocco, ultimately supported by the British Government. But, though less acute, the Russian menace (as the Germans thought it) was increasing side by side with this Western provocation—as the Germans regarded it to be.

We can be mathematically certain when the decision which changed the German attitude from one of indefinite delay and of a mere reliance upon time as the ally of their Empire to a determination to attack came.

It was in the summer of 1911 that the directing minds in the German Empire decided upon war.

When I say that this is mathematically certain, I mean that it is a judgment susceptible of mathematical calculation. The accumulation of stores and of complete equipment for a particular date, the study of the effect of heavy artillery in the field, and the necessary length of and preparing ammunition therefor; the enlargement of the Kiel Canal; the increase in the number of trained men—every step which we now see to have been taken by the military authorities and the Government of Berlin—exactly converges upon the summer of 1914. It was not, however, believed that Great Britain would actively join the Franco-Russian alliance against Germany when Germany forced war, though it was believed that Great Britain was the author of the general scheme which threatened German expansion.

When a preparation of about three years, designed for the summer of 1914, was afoot, it was obvious that the war must be forced as soon as possible after the harvest. Everything was well thought out and accurately ordered, as befits a civilised nation preparing secretly for an act of war to be effected at its own moment.

Stores of cereals, dependent upon the harvest, must be waited for, but for some months before that date other accumulations of stores not dependent upon the harvest must be provided: money, certain metals not sufficiently present within the boundaries of the Empire, and so forth. The financial dispositions began to be taken, apparently, shortly after the beginning of 1914.

There was a realisation of foreign investments; there was a steady accumulation of gold; and, most important of all, there was a plan laid whereby the City of London should, even if Great Britain did not enter the war, be hampered in the financial support of those who (in the German conception) were to fight England's battles upon the Continent.

An admirable occasion for the pretext of war was afforded by the assassination of the heir to the Austro-Hungarian thrones at the end of June. Immediate advantage could not be taken of it, however, because it came a little too soon. The harvest was not gathered and the last preparations were not made. For a whole month Europe was allowed to believe that the crime would have no serious international consequences. At the end of July the Austro-Hungarian Government presented to Serbia—that is, virtually to Russia—a challenge of such a sort as had never been presented in Europe before. It was a direct demand for war. But the ally of Germany, which in this matter acted as her servant, had not the determination of the master. As late as Thursday, the 30th of July, Austria hesitated. The Government at Berlin at once stepped in and made matters certain by the double ultimatum presented within the twenty-four hours to Russia on the one side and to France on the other.

Now, the mood in which the directing mind of Germany entered a great campaign at this moment was one absolutely certain of immediate victory. The Russian mobilisation would be slow, Russian communications were bad, the Russian object in the war was not national salvation. To hold up Russia upon the East was at once easily possible and amply sufficient. It would be many months before Russia could be a menace, though ultimately—within a year, say—Russia might have found time to equip and to munition those very considerable numbers which were her principal asset.

But meanwhile in the West a decision could be arrived at, and that without peril of miscarriage. France could be suddenly attacked in overwhelming numbers and in a fashion for which she was not prepared, and the destruction of the French resistance would make possible in a comparatively brief space of time an arrangement with Russia upon the East.

The space of time thus required for the complete success of the enemy's plan was the more restricted from the fact that this plan did not involve too large a direct political achievement. It hardly aimed at annexation at all. It aimed at undisputed hegemony in Central and Western Europe. France was not to be dismembered, but, already in active decline (as the Germans thought), was to be rendered incapable of giving further trouble.

Russia had only to withdraw her pretensions in the Balkans, and to leave the economic expansion of Germany and Austria a free hand towards the South and the East. England, after these first rapid blows, would accept the result.

In the popular mind this decision took the

form of confidently expecting great victories at the outset of war and a victorious peace, perhaps within a few weeks, certainly within six months of its inception.

The first of these expectations was amply realised. The strong fortress of Liège was completely in German hands within ten days of the first shots. The full mobilisation of the German forces had not been completed a fortnight when the greater part of Belgium was securely held. The capital, Brussels, was entered and occupied immediately afterwards. The first French armies gathered to meet the shock were borne down in an avalanche of invasion. All the six weeks succeeding the forcing of the war were an uninterrupted triumph, *even exceeding what had been expected by the general public in the German Empire*: the whole garrison of Mauberge, the crashing blow of the battle of Metz, the uninterrupted and enormous charge through Northern France to the very gates of Paris, prisoners by the hundred thousand, and guns in interminable numbers. To crown all, just as the decisive stroke against the beaten French Army made possible the immediate occupation of Paris, with the approach of Sedan day, the German population received the astounding news of Tannenberg.

The point has been repeatedly emphasised in these pages. It needs no further elaboration. The mind of a nation influenced by a legitimate exaltation of this kind can change but very gradually; and cannot change at all save under the pressure of some vivid and clearly defined disaster.

No such disaster followed. Nothing happened which could reasonably make the general lay opinion of Germany abandon its old unquestioned confidence in the supremacy of its military machine and in the certitude of ultimate victory.

But what happened was of a nature which, if it could not thus affect the popular mind, was certain to affect the *directing* mind, and, in particular, the soldiers ultimately responsible for the conduct of the campaign. For those soldiers had planned a great strategy of a simple sort, and the plan had manifestly gone wrong. The battle of the Marne meant that the envelopment or crushing of the French Army was thenceforth impossible. It meant that the rapid decision in the West was, therefore, equally impossible, and that the campaign would be indefinitely prolonged. More than that at first it did not mean.

The second chapter of the war emphasised in the directing military mind of the enemy this new mood. Pinned to a line of trenches 400 miles long, but still in superior numbers, the obvious task for the enemy in the West was now to break through. From the early part of October to the middle of November the enemy's Great General Staff massed his vast numerical superiority for a great attempt to break through the northern end of the line, first upon the front Dixmude-Nieuport, then upon the front of the salient of Ypres, held by the British contingent. He disastrously failed in the double attempt. He suffered very heavy losses indeed—certainly the equivalent of six army corps—and he knew that the future was more doubtful than ever.

But it must be clearly borne in mind that the renewed failure, most significant to the staff, had no immediate effect upon the popular conception of the war. As we see clearly enough from the instance of our own popular opinion, such purely

adventitious conditions as the fact that war was taking place on the enemy's soil, that there was no dramatic single surrender of large numbers of prisoners and guns, &c., were quite sufficient to maintain (though they could not reinforce) the old confidence.

We know how different is the attitude of the purely military observer from that of the general public in any military operation.

Perhaps the clearest example of the contrast is to be found in the fact that mere advance is coupled in the popular mind with the idea of success, and it is often even identified with it.

The third chapter of the war opened with yet another change of plan upon the part of the enemy's directing military mind.

So much time had passed by the middle of November that Russia might in the course of the next few months prove formidable. If she became really formidable in equipped numbers and ammunition in a further five or six months, and no decision had in the meantime been reached in the West, the German fortunes, already very doubtful, might begin to turn towards disaster. By this time—the middle of November—quite half the available untrained German men to be put into the field had already been put into the field. The remaining margin was not very large, and the wastage from the conditions of a winter campaign, from the fact that everything had been designed for a short war, but, above all, from the strategic and tactical traditions of the Prussian service, was continuously enormous.

This third chapter therefore took the following form:

The Germans, with their Austrian ally, were to pin the Russians behind the Vistula while still the winter lasted. To achieve this immobilisation of the enemy upon the East, it was necessary for the Germanic alliance to command permanently the railway bridges of Warsaw; and to that end, leaving in the West only just sufficient numbers to hold the line, the main energy of the enemy was directed throughout the whole of the winter.

The grand strategy of this third phase is still in progress, but so far it has failed precisely as the grand strategy of the first phase, the envelopment or destruction of the French, and the second phase, the breaking out in the West, had failed in their turn.

The attempt to carry Warsaw by direct attack from the West broke down and was abandoned after the first week in February. The attempt to carry it round the northern flank broke down, in its first effort at least, by the first week in March. We are just coming to the first week in April, and Warsaw, with its bridges, is still secure.

A secondary, and rather political than military, field connected with this main Polish effort was that of the Carpathian front. The Austro-Germans must clear the Russian armies from Galicia if they were to free Hungary from the menace of invasion during the coming spring. With this object in mind they massed forces far superior to the Russians in the field, and planned, while holding the Russians along the front of the mountains, to turn them in flank from the south-east. They were aided in this conception by the prolonged resistance of Przemyśl, with its garrison of some three to four army corps. Should Przemyśl fall, it was certain that the Russian armies in Galicia could not be expelled. Przemyśl fell upon March 22. The abandonment of the

attempt to turn the Russian flank had already been settled after a little-known battle of critical importance fought ten miles south of Halicz, which ended on March 4 with the Russian occupation of Stanislaw.

Such, then, is the present situation of the campaign in the mind of the directors of German strategy. They see their original plan all gone to pieces, they see the second phase (which was an attempt, not to restore the original plan, but to redress its disastrous failure) ending in the middle of November in a further complete failure. They note day by day, with the figures before them, a gigantic and unceasing rate of wastage immensely superior to that of their enemy, especially to that of their enemy upon the West, and they perceive, with winter rapidly drawing to its end, with the munitioning of the Russians in sight within the next few weeks, with the Dardanelles seriously threatened, with the new contingents about to appear in the West, and, perhaps most important of all, with the rapid production of ammunition and of sufficient heavy artillery for trench work in the West, that the third phase of this plan for the immobilisation of the Russian armies is heading straight for a third disappointment.

It is morally certain that under such conditions the Great General Staff of the German Army no longer presumes upon victory.

It is morally certain that it no longer presumes upon imposing its original will upon the will of the Franco-Russian-British allies.

A critical turning-point in the mind of the enemy has been reached. The change has run its full course in the directing part of that mind, and the tuning of German public opinion to another key has also begun.

The all-important problem which we must try to solve at this moment is the present state of the German mind, directing and directed, towards the future of the campaign.

I will hazard the suggestion that it is at the present moment an attitude to be defined somewhat as follows:

"The war has not gone as we expected. We admit it freely. But it has become something much more serious for us than the danger of defeat. We are—no matter through what accident or whether we are to blame or no—fighting for our existence. The issue ought not to be of this character. We did not threaten the existence of others; we only threatened their too great power, and tried to take the place we thought our due. We are prepared to meet a reasonable demand upon us and to discuss terms. We quite understand that to leave certain districts in German hands after the war would be unwise. We quite understand the demand for limited autonomy in Poland; but, of course, Russia will have to follow suit. We do ask for certain facilities in the Low Countries, especially for trade and outlet to the sea; but we want nothing more than that—which is, after all, only the public recognition of advantages which would be ours anyhow by the natural progress of our trade and produce."

In some such attitude as this they would approach Europe and the neutral countries. In other words, they would be asking for a draw.

Now, this is something which has been long foreseen and much discussed—in these columns as elsewhere.

But the novel feature which depends upon quite recent evidence is the way in which the state

of mind behind such a demand is already apparent on the German side.

It is no longer a case of prophesying that some such attitude would ultimately be adopted. It is a case of recognising that it is already adopted to-day.

The directing military mind of the enemy has decided that victory in the original sense is now quite impossible. It proposes, as will be argued in a moment, the ultimate resumption of what it regards as the vital part of the struggle—the attack on England; but in the immediate future it wishes for peace upon terms that will leave Germany almost as strong in proportion to her neighbours as she was last year. It is preparing the general public opinion of Germany for a corresponding movement of opinion upon the part of the neutrals, and perhaps of certain elements which it believes it can find among the Allies.

Note, for instance, the double work which is appearing in our Press, as in that of other countries—one limb of which work consists in the new moderate description of German aims and of German successes therein, the other limb of which consists in describing the still perfect organisation and still calm confidence of the German military machine.

In the first of these matters the most striking document has been General Bernhardt's summary of the war for the Americans. General Bernhardt is a very lucid and, what is more, a very weighty writer. His technical work is, I believe, universally admired by all those competent to judge it, and his excursions into politics, if less valuable, are yet clearly the product of a man who can think his subject out and state it well. His religion may not be our religion; but one can be certain after reading his work that he writes whatever he does write with a definite object and fits his means to his end.

What he has been recently writing for America is, therefore, a piece of evidence to be closely studied. And it amounts, roughly, to this: "We have not done what we thought we could, but we are not defeated—it is not even possible to defeat us in any thorough manner; and meanwhile we have clear advantages over the enemy which we permanently hold."

He then proceeds to summarise those conditions, and it is well worthy of note that they are the sort of things which particularly appeal to civilians, and which few soldiers would, if they were writing for soldiers only, take the trouble to mention.

The document is as valuable a witness in what it leaves out as in what it puts in. For instance, the (to us) extraordinary description of the battle of the Marne is, from the point of view of the writer, and of the effect he desires to produce, exceedingly well done. The right wing of the German Army fell back slightly, but before superior numbers; it fell back in good order; its losses were inconsiderable, &c., &c. One can conceive a less able man making a fool of himself in trying to describe so that it should appear favourable to neutrals, and particularly to uninstructed opinion, that deadly blow delivered in the second week of September which would seem already to have changed the course of European history.

But General Bernhardt's description is perfectly suited to the object he has in view. It is true that the Allied numbers were superior to the German right wing. The fact that the concentration of this superiority upon one part of the field,

although the total forces on the Allied side were heavily inferior, was a triumphant piece of strategy he discreetly veils. It is true that the retirement was at its maximum over but a few miles—say three or four days' march—and at the pivot end of the swing hardly noticeable. It is true that the losses were not heavy for an operation of the kind, or at least not exaggeratedly heavy. And what he goes on to say is equally true—that the attempts to turn the German right wing failed.

But the skill shown in the concoction of this document, though worthy of some admiration, is not the main point. The main point is the object he clearly has in view. And that object is not the compelling of the neutrals to any exaggerated admiration for Germany: on the contrary, its object is rather to provoke a limited and sober respect. Let anyone unacquainted with military history as a whole, of all principles of strategy, and the main lines of the present campaign, read Bernhardt's work. Such a reader will conclude that the Germans have not done as well as they expected, but they can still put up an interminable fight which it would be foolish to prolong.

Bernhardt knows that Germany is making for defeat, and that any nation, once defeated, can be and will be crushed. He is a soldier. But his civilian audience here and elsewhere do not know this.

Exactly the same thing is apparent in the descriptive articles of German ambulance work, German recruiting, German food supplies, and the spirit of the German people at home, which are mysteriously appearing even in the journals of the nations now fighting Germany. "We have no exaltation, such as there was at the beginning of the campaign, but there is a carefully calculated dissemination of confidence—not confidence in any decisive success, but confidence in the power of indefinite resistance."

Interviews granted by public men in Germany to their journalists, and equally finding their way into the Press of the Allies, are upon the same note. As though by order, all fantastic boasting has disappeared, and its place has been taken by a sort of quiet regard of the future, which is intended not to terrorise, but to make the enemies of the Germanic alliance regard the struggle as interminable.

When we turn to a third category of evidence, the domestic Press of Germany, we find a slightly different note, but one still in consonance with the effect which is aimed at in the neutral countries, and upon certain sections of opinion among the Allies.

The fact that the war is still being prosecuted in foreign territory is perpetually insisted on. The fatuous description of the siege work as "the invincibility of the wall of steel" regularly appears and reappears. No hint is given of the plain military truth that, in a state of siege such as this, the initiative has passed to the besiegers.

Take a particular instance. The whole breakdown of the great German "sortie" against Warsaw is recorded as a series of local successes; and in that record the absence, or, rather, the negation, of general success is forgotten.

Now, this impression, deliberately calculated and imposed upon the German public in one form, and upon the neutral and allied public in another does not of course deceive its

own authors. The Great General Staff knows its own losses, it knows the adverse conditions of the present siege work; it has reckoned very seriously the limits of time within which it is working. *But we should fall into disastrous error if we imagined public opinion in Germany was merely playing a part.* It is honestly convinced; and it does not recognise that it is acting under orders.

This is, of course, less true of public opinion in the Dual Monarchy. The Press, the accounts of travellers, and private letters amply testify to the big rifts in the corresponding state of mind which it has been the object of Germany to produce in the mixed populations of her ally. She has failed; and whereas Germany proper has suffered no dramatic blow which could awaken the public conscience to the truth, Austro-Hungary, in the fall of Przemyśl and in the now certain peril of the Carpathians, is not in the same case. Further, Austrian soil is occupied, and the Austrian losses in prisoners are hardly less than double those of the Germans. The Austrians taken prisoner by this time must be well over 400,000. Przemyśl, at the end of the story, and Lemberg, at the beginning, alone account for far more than half that number.

Austro-Hungary, then, is already, so far as its mind upon the war is concerned, entering that condition which the German mind would only enter after some considerable local defeat or after the occupation of some considerable portion of German soil, or after the surrender of some considerable garrison.

Well, the general lesson to be drawn from the present attitude of that which is morally the chief part of our enemy seems to me to be this: We must regard his present confidence, especially in its calmness and superficial strength, as at once a real emotion and a particularly artificial one. I do not mean that there is not the chance of change adverse to us and favourable to him. But I do mean that the gulf between the military reality and the public opinion supporting the German soldiers is a gulf to-day very much wider than any which has existed previously in this war. Between the height of almost insane exaltation of the first days and the very great achievements of the German army in those same first days there was no such strain. To-day there is all the strain that accompanies an unstable equilibrium, all the top-heaviness that any State suffers (particularly in time of war) when those who know are in a mood utterly different from those whom they instruct.

We often hear it said that the awakening will be terrible. It is no more than a private judgment, but personally I should doubt it. Changes of opinion—the ridding of public opinion from illusion and the fitting of it to reality—are only terrible when violent. It is even possible, if things were mishandled, that the enemy might get his inconclusive peace in time, and that his public should never learn the present anxiety of its rulers.

But one thing is certain: if he gets his inconclusive peace, then, without doubt it will be but a truce so far as this country is concerned. And whatever a settlement might do for the satisfaction of the Continent, it would leave the German Empire at least determined and able to pursue, at no very distant date, its task of undermining the supremacy of Great Britain at sea and the whole international position of these islands.

INFLUENCE OF AIR POWER.—II.

SIR JOHN FRENCH'S MESSAGE.

By L. BLIN DESBLEDS.

NOTE.—This article has been submitted to the Press Bureau, which does not object to the publication as censored, and takes no responsibility for the correctness of the statements.

" . . . I feel sure that no effort should be spared to increase their numbers and perfect their equipment and efficiency."

IN these words Sir John French, in his report, dated November 20, 1914, concluded a stirring paragraph dealing with the invaluable services his aircraft had rendered him in times of great stress. The importance of that message cannot be overestimated. If aircraft are to have any considerable influence in shaping the course of the present war "no efforts should be spared to increase their numbers and perfect their equipment and efficiency." And here arise two very serious and pertinent questions: Are we doing our utmost and are we utilising to the full extent the resources of the country for aircraft construction? These are the questions to be examined now that the influence of air power has begun to be realised.

And in order that the reader may, when considering these two questions, be in a position to judge for himself whether they can be answered in the affirmative or in the negative, it is necessary for him to know certain things about the production of aircraft.

Before entering, however, upon the necessary explanations to enable the reader to grasp the present position of Great Britain's aircraft productivity, the writer wishes to lay stress upon the fact that, in writing this article, he is solely actuated by the consideration and by the hope that it may prove useful to those responsible for the construction of our air fleet. He has no intention of criticising a Department which has risen splendidly to face an unprecedented situation and to undertake a work at least twenty times as great as that for which it was organised. It is to the great credit of our Aeronautical Department that its achievements are already sufficient to allow us to judge, in actual practice, of the possible ultimate influence of Air Power.

An aeroplane in flying order consists of several hundred small parts, of metal or of wood, carefully put together. These parts themselves are simple of construction, and can be made in any fairly-well equipped workshop. Their manufacture does not demand any considerable special knowledge nor any special experience. A good mechanic or wood-worker can easily produce them under proper supervision. The assembling of the parts to form complete machines is, however, a more difficult work and requires adequately trained men. It will thus be seen that, broadly speaking, aircraft construction depends upon two factors: (1) the making of parts; and (2) their erection.

That there is a very great and pressing demand for aeroplane parts cannot be doubted. These parts are not only required for the construction of the complete machines, but are also indispensable for repairs at the front. It is giving away no secret of the Allies' aeronautical organisation to say that each machine that is put into service requires a certain number of spare parts to make good, with as little delay as possible, the breakages which are inseparable from the employment of aircraft over unprepared ground. In fact, it has been estimated that, in the present stage of development of aeronautics, quite a third of the number of aircraft on active service is, at any one time, in the repair shops. It is, therefore, a matter of surprise that the full resources of the country for the manufacture of aircraft are not yet utilised, especially in view of Sir John French's message quoted at the commencement of this article.

To supply the need of our army and its gallant Commander-in-Chief for a numerous and well-equipped air fleet is manifestly our duty, and no pains should be spared, and no possible means neglected in this endeavour. Our Aeronautical Department has done magnificent work, and for its achievements the country owes it a debt of gratitude. But the fact must be faced that this department is now taxed to its utmost, and is not organised on a scale sufficient to meet the unexpected situation arising out of the war.

To the excessive demands made upon our Aeronautical Department must be ascribed the three following causes of delay which hinder it from taking full advantage of the industrial resources of the country.

These causes are:

1. Considerable delay in having the necessary material passed by the Government inspectors.
2. Too much time is allowed to elapse between the giving of consecutive orders. This is especially the case when orders are given to the smaller firms.
3. Most serious. The manufacturers experience a great delay, in some cases extending over several months, before they are paid for the work done and the goods supplied.

The elimination of these three unfortunate causes of delay brought about by the high pressure at which our Aeronautical Department is now working, would, without any doubt, greatly accelerate our rate of aircraft production.

And as well as the necessary removal of this check to the manufacture of aircraft due to the causes arising from an overtaxed organisation, there are also numerous sources of supply which would, if utilised, still further assist to increase our possible rate of aircraft production. As evidence that these sources of supply are as yet untapped, and are only waiting to be drafted into channels of usefulness, the writer will quote from a few of a great number of communications which he has lately received from industrial firms all over the country.

In a letter dated February 17, 1915, a firm having already experience in the manufacture of aeroplane parts, says: "We could easily make three times the quantity if we had the orders; the main difficulty is to get the material passed by the War Office inspectors. For instance, we have had one order on hand since December last and finished the tools early in the year, but we are still without the material, our customers informing us that they cannot send the steel as it has not yet been approved. As it seems to be only mild steel strip for the wire strainers there ought not to be this delay. Provided this obstacle could be removed, we could give immediate delivery, as we have the tools made."

The manager of another engineering firm writes: ". . . Several of our mechanics are at the front. . . but we are decidedly short of work for those remaining, mostly over age, or could not pass the doctor. . . The making of aeroplane parts would suit us very well, since we are well cut out for the work. . . Should you be able to put some work in our way, we would all do our best to give satisfaction."

On March 3 another firm, evidently not working to its full capacity, writes: ". . . We have excellent facilities for turning out in quantities small fittings, both in wood and metal."

One of the largest contracting firms in this country writes: "We are of opinion that a considerable amount of our present machinery could be utilised. . . but, in all probability a certain amount of special machinery would be necessary. We feel convinced that should our plant be capable of doing the work without any large expenditure of money for special machinery, our directors would be only too pleased to be of any use to the Government in this way. . ."

From another letter: "I have a large factory equipped with up-to-date machinery, and, owing to the present slackness of trade, same is not being fully used, and I think I could undertake to manufacture any small parts in metal." "We have a large pattern-shop, foundry, forging, turning, and fitting shop," writes another manager. "We are at the present moment rather slack, and could give prompt and immediate attention to any work which you might be able to place our way. We enclose you a photograph showing the interior of our erecting-shop, which will give you some idea of the capacity of our works."

The writer could give many similar extracts from the numerous letters he is receiving daily from industrial firms. He thinks, however, that the excerpts he has given are sufficient to show that there are yet a great number of engineering firms not working at their full capacity, and that these firms are willing, and are probably sufficiently well-equipped, to carry out the construction of aeroplane parts.

THE WAR BY WATER.

By FRED T. JANE.

NOTE.—This Article has been submitted to the Press Bureau, which does not object to the publication as censored, and takes no responsibility for the correctness of the statements.

THE MEDITERRANEAN AND DARDANELLES

UP to the moment of writing (Monday evening) there is a species of lull in the Dardanelles operations and a tendency to believe that the set-back received by the French Fleet was more serious than at first imagined. The paucity of news concerning the French is doubtless mainly responsible for this, also the information that naval reinforcements are being despatched. This, of course, would, on the face of it, seem to suggest that the Allied Fleet has either been found insufficient for the task in hand or else that it has been damaged more badly than we have been led to believe.

Actually, there appears no reason for despondency of any kind. No one at all conversant with the various factors involved ever expected that there would be any sort or kind of walkover. The forts have possibly proved more formidable than was first anticipated, but perhaps the chief of the "more formidable than expected" factors is the mobile artillery attack on the mine-sweepers.

Even here, however, it is well not to draw too serious conclusions about the *officially* unexpected having happened.

Taking all the information available it would appear that the first big attack which led to the destruction of the four forts at the entrance was somewhat of the nature of a reconnaissance in force. It would look as though the integral idea was to test the defences and weaken them so far as might be preparatory to the landing of a strong military force on the Gallipoli Peninsula, such as is now taking place, and that there was no deliberate intention of attempting to force the Narrows. To which may be added (as surmised last week) the creation of a diversion to allow time for a Russian land attack from the Bosphorus direction to develop.

There was, perhaps, the further consideration that with large naval activities taking place so near home Turkish military operations against Egypt would be heavily handicapped. It is, indeed, quite within the zone of possibilities that owing to the, perhaps unexpected, rapidity of the recent Turkish movement against Egypt, the Allied Fleet commenced operations at an earlier date than had been originally intended. This at any rate would be a quite logical use of a Fleet in co-operation with military operations, and a clear use of the potentialities of Sea Power. History teems with instances of warships being employed to exert pressure at one point in order to affect the issue at some other and far distant spot.

Any of the above are far more reasonable suppositions than the hasty assumption of "someone has blundered," or that the task has been underestimated by those responsible for its inception. There is every expectation of eventual victory, but roseate anticipations of its early accomplishment are best left alone. Far more probably there will be slow and arduous progress, culminating in a sudden and perhaps unexpected collapse of the defence.

From now onward we may expect the attack to assume three distinct phases:

- (1) Purely naval operations.
- (2) Purely military operations on shore.
- (3) Concerted joint operations, resulting from the independent actions of the first two.

This last, if the teaching of history goes for anything, will be the critical stage of affairs. In the past combined naval and military operations have always had an element of chance about them; and been brilliantly successful or dismal failures, according to how far or how little the naval and military commanders have understood each others' limitations, and possibilities.

AUSTRIAN SUBMARINES.

A statement has been circulated to the effect that Austria is building twenty large submarines with a view to a "submarine blockade" of the Mediterranean. That she is building them is probable enough; but the rest of the story is rather absurd. Not only is Austria faced with the problem of finding trained crews, but she is also confronted with the problem of how to get through the French blockade in the Adriatic, to say nothing of bases and the return home again.

Probably the real idea is some kind of counter-attack on the Allies in the Dardanelles, or on trade therethrough later

on, when Constantinople has fallen. The threat can safely be heavily discounted, whatever form it may ultimately take.

SUBMARINE AND TORPEDO OPERATIONS.

This being the first war in which submarines have taken a real part they were bound to be a factor of varying importance with a hypothetical value rising and falling until the submarine had adjusted itself into the general scheme of things. The past saw a precisely similar process in connection with torpedo craft. In the early days of these nearly every admiral held views totally different from those of every other admiral—these views running the whole gamut from omnipotence to impotence.

This variation of opinion was little if at all due to predilection, progressivism, or conservatism; but almost entirely caused by personal experiences, which in the early days varied very considerably. A brief study of the evolution of torpedo craft will therefore go far to elucidate the position of submarines in the present war; all the more so, perhaps, because Admiral Fisher has been so closely identified with the progress of both arms, and his work in both cases has followed the same general idea.

Like the submarine, the torpedo-boat first appeared as a very trivial craft armed with a very inefficient weapon. In the American Civil War of some fifty years ago it was a hybrid sort of vessel—half submarine, half torpedo-boat, seemingly just as likely to develop in one direction as in the other. In the years that followed it developed as an above-water craft, in part owing to the difficulties which then existed in connection with suitable submarine motive power, in part owing to the fact that in the war of 1877 the Russians extemporised launches as spar torpedo boats, and made a *war factor* of them, in part because of the advent of the Whitehead torpedo, which rendered the boat's actual contact with the enemy no longer necessary. There was no adapting the Whitehead to the elementary idea of a submarine.

Some two or three years later, the old *Inflexible* (the *Dreadnought* of her day) was equipped with a couple of small torpedo-boats, which she carried as an integral portion of her armament, and it was Lord Fisher (then captain of the *Inflexible*) who, asked what he would do if he met a warship equal to his own, replied that he would probably not engage her and risk receiving as much damage as he could inflict, but wait till night and then send his torpedo-boats to attack the enemy.

Thereafter Lord Fisher was closely associated with the development of the torpedo-boat as a self-contained sea-going offensive arm. Since he was the creator of the *Vernon* torpedo school he may be regarded as the father of our torpedo-service in very early days.

This development was later on attended with varying fortunes. For example, in the 1890 naval manœuvres, the entire fleet of one side was torpedoed almost immediately after "War was declared." The circumstance was more or less hushed up at the time so far as the general public was concerned—and the event "was considered not to have taken place" on the grounds of some technical point in the reading of the rules.

Still, here was the torpedo-boat in a state of omnipotence. In the following year, however, certain special torpedo manœuvres were carried out with entirely different results, the torpedo-boats being hunted down and rendered impotent to an extraordinary degree. In the next year again somewhat similar results occurred. — I am writing as an eye-witness of these various operations and of many things which happened, but, very properly, did not find their way into print at the time. The swing of the pendulum of opinion was extraordinary.

These various operations ultimately led to the evolution of "destroyers," on the homeopathic principle that "the torpedo-boat is the correct reply to the torpedo-boat." Generally speaking, there followed a very general conviction that the torpedo menace was an empty phrase; a state of opinion which endured till Lord Fisher (then Commander-in-Chief in the Mediterranean) startled the world by giving up the time-honoured "steam tactics" and substituting therefor the evasion of torpedo craft.

It is indicative of "opinion" at that time that for this

he was most fiercely assailed and criticised, despite the fact that once at least in test operations his entire fleet was torpedoed. However, the net result was the rehabilitation of torpedo craft and very large destroyer programmes. In this stage the torpedo-boat itself practically disappeared, its place being taken by the destroyer, which was *facile princeps* till the Russo-Japanese War, wherein it accomplished less than the enthusiasts had expected, mainly because war experience taught means of evading the worst dangers.

This particular war also taught the future possibilities of submarines, despite the fact that the elementary boats there engaged proved absolutely non-effective. The net result of the war was that the destroyer assumed its proper place in the scheme of things—roughly something midway between the two extreme points of view which were held in the past. The most generally accepted modern view is that if destroyers find battleships at night they will successfully torpedo them—their handicap is the finding.

Now, if we come to consider the evolution of the submarine, we find a not very dissimilar series of vicissitudes.

From being the idle dream of inventors, the submarine suddenly came to be regarded as an invincible arm, destined to sweep the seas of all above-water craft. That was before our Navy had any submarines, or in the early days of the elementary Hollands, which have long since been scrapped.

Later came a period when it became known that only one of our Holland submarines had ever torpedoed a warship under battle conditions. This was subsequently followed by a series of disasters of which the net result was a decided tendency unduly to depreciate the value of the submarine.

From here onwards it is, for obvious reasons, inadvisable to deal too fully with the course of events. It suffices to say that some little while before the war the submarine had easily reverted to a position of very high importance; while we had the official statement that it was probably destined eventually to replace the destroyer altogether.

Since the war vicissitudes have continued. It is clear that the Germans placed unlimited faith in their submarines—a faith which, at any rate till quite recently, appeared to be abundantly justified. I say “appeared” because while their successes can be counted, the record of their failures is necessarily vague. Some record of torpedoes which failed to hit officially exists no doubt, but a record of how many German submarines failed to gain suitable positions for attack must necessarily be unknown. What we do know, however, is that means for combating the “new danger” are being steadily perfected—three German submarines having been officially stated as sunk by the Navy since the blockade began, plus other losses of which no full details are available. The net result of this is perhaps an undue depreciation of the submarine *quâ* submarine.

Very early in the war I ventured to prophesy in these Notes that for reasons having to do with the *personnel*, German submarines would eventually prove far less efficient than our own, and that we should find the bulk of the work done by a few only of their boats. This last has certainly happened. *U 28*, sunk last week, was commanded by the same officer who distinguished himself against our *Cressies* in *U 9*, and who, in his new command, did most of such work as was done by the “blockaders.” In submarines the man is certainly more than the machine; and German naval officers as a class lack that ability to adapt themselves to the peculiar conditions, as between officers and men, which are essential to the successful and effective use of submarines, and which obtain in our service.

Here a word or two may be said about the curious theory held by a somewhat considerable section of the British public that the German submarine service is superior to our own. It is well to correct this idea. It is obvious that so far as *matériel* is concerned, as a general rule, the bigger the boat the more potentially effective she must be.

Now, any British boat is larger than any German boat of equal date—we have always led in dimensions. Increased dimensions necessarily mean increased speed, or increased radius, or increased habitability (a very important point), or very possibly all three in varying degree. Our boats are, therefore, as machines, capable of accomplishing all that the German boats have done, and more. This is obvious.

As regards *personnel* I have already explained where our advantage lies. Yet there is the unfortunate public impression which justifies the sarcastic naval jest: “To the public every German submarine is a pirate, every British submarine inefficient!”

In vain did the Israelites of old explain the impossibility of making bricks without straw. Egyptian ideas on the possible and impossible still prevail. Metaphorically speaking, our submarine service is “without straw” in just the

same way as is our battle fleet. And so we hear little or nothing of the weary routine of work of our boats, and as a nation fail to realise that they are “containing” the enemy, despite the fact that a fast squadron has slipped out now and again without loss from our submarines.

To turn to more general matters, it seems clear from recent events that the submarine is essentially the weapon of the stronger power, and likely to grow less and less important as the weapon of the weaker. The whole or most of the destruction which our Navy has inflicted on German submarines has been mainly due to the fact that we are the stronger power. Had the Germans been able to support their submarine “blockaders” with cruisers, they would have had none of the hazard of secret bases, and their liability to be rammed would have been reduced to a minimum.

If, and when, the German big ships offer opportunity to our submarines, these two inconveniences will be absent on our side, and we may confidently look forward to the submarine coming definitely into its own as the weapon of the stronger naval power. As the weapon of the weaker we may (as measures to neutralise its menace are developed) look to see it fade in importance. This, of course, is exactly what eventually happened with torpedo craft.

For the rest, the Admiralty figures of the net result of the submarine blockade during one month are nineteen British merchant ships sunk, out of 5,970 which reached or left home ports during the same period. The chances of loss were, therefore, just about 1 in 314; and something like half a dozen “pirates” may have been accounted for—lost in the process. This works out at an average of six ships per pirate.

The cost of German submarines (*pace* a recent omission of a cipher in an answer to a correspondent) works out at from £60,000 to £100,000 for the little boats, and about £170,000 for the larger. As the blockaders are mainly large submarines we may pool the average cost per boat at, roughly, £150,000. Allowing for torpedoes expended, upkeep of tenders, and what not, the blockade must have cost Germany at least one and a half million pounds in dead loss—quite probably it has cost her two millions, and this irrespective of loss of war services of her submarines, and effective crews now drowned or captured, who can hardly be replaced within the time-limits of modern war.

AERIAL OPERATIONS.

German aircraft have also co-operated in the submarine “blockade,” but so far without any result whatever. A story has been published of one British merchant ship which fired rockets at an attacking aeroplane and frightened it off accordingly. The story may be accepted—with some limitations; the chances of hitting being to all intents and purposes non-existent. The aeroplane is reported to have sought higher altitudes in consequence of being fired at; possibly the pilot suspected some new kind of war rocket with wire entanglements attached.

While the German aircraft have been mostly engaged in more or less fatuous operations, the British aeroplanes have been conducting operations of a direct military significance. Bombs have been dropped on a German submarine yard recently established at Hoboken.

The exact amount of damage done is necessarily conjectural; but, according to Dutch reports, one submarine was destroyed, and others damaged, considerable havoc being also wrought on the workshops.

MR. HILAIRE BELLOC'S WAR LECTURES.

London..... Queen's Hall..... Wednesday..... 7 April, 8.30 p.m.

A series of lectures on the Progress of the War from month to month will be given at Queen's Hall on the first Wednesday in April, May, and June. Seats are now being allotted.

A lecture will also be given at the Opera House, Tunbridge Wells, on Friday, April 9, at 3.30, on “The Strategy of the War.”

MR. FRED T. JANE'S LECTURES ON THE NAVAL WAR.

Torquay..... Pavilion..... Saturday..... 3 April, 3 p.m.

Plymouth..... Guildhall..... Wednesday..... 7 April, 8 p.m.

MR. CRAWFORD PRICE (Eye-witness in the East) LECTURES ON SERBIA—The Tale of a Gallant Nation.

Blackpool..... Winter Garden..... Tuesday..... 13 April.

York..... Opera House..... Wednesday..... 14 April, 3 p.m.

Manchester..... Free Trade Hall..... Thursday..... 15 April, 8 p.m.

Southport..... Cambridge Hall..... Friday..... 16 April, 8 p.m.

We have received a copy of “Warren's Map Guide” to the motor, motor-cycle, and cycle trades in London. It forms a useful and valuable directory, as it contains every one connected with these trades in alphabetical order, and also geographically arranged over seventy maps, so as to show the exact position of each firm. It is a street guide to over 8,000 streets, and addresses can be turned up either from the streets or from the alphabetical list. It is a valuable book for motorists and motor cyclists.

THE PASSAGE OF THE RHINE.

By COLONEL F. N. MAUDE, C.B., late R.E.

DURING the last few weeks the Allies, each in their separate spheres of action, have completely demonstrated their power to hold their ground anywhere and everywhere that it may please the enemy to assail them. On the French frontier we have indeed gone farther, and have given convincing proof that we can make the Germans dance to our piping—in other words, they must attack us where and when we dictate, and not where they might themselves choose to strike.

This ought to satisfy the most greedy for the moment. But no sooner is one bogey laid than another springs up. Judging from my correspondence and the daily papers, our people now appear to be obsessed by the fear that we shall never be able to force the passage of the Rhine.

I cannot share this fear, or doubt, for after studying that river from this point of view for very many years, and setting aside for a time the question of improvements in armament, I know very well that the passage of the Rhine has been forced again and again, and "What man has done, man can do." is a good working motto.

Now there is a curious paradox about the passage of waterways which has never received the attention it deserves; it is one that military history shows as holding true within limits quite wide enough for the present purpose, and this is, that once a stream becomes too deep to wade and too wide to jump, the wider it grows, still remaining navigable, and the longer it becomes, the easier it is to surprise or force its passage.

This is only another way of expressing the axiom that the Power which controls the sea can disembark its troops, within certain limits, wherever it pleases. But though sea power depends on fleets, it is the fire power carried by the ships, not the ships themselves, that confers the ultimate power.

In all fighting, since firearms definitely established themselves as the principal weapons on the battlefield, no position has ever been carried, except by surprise, until or unless the assailant has first established a local superiority of fire power; and as far as the defenders are concerned it has been quite immaterial to them, once the superiority has been acknowledged, whether the weapons which delivered the bullets were fired from a floating or a land platform.

The case of the Yser Canal and Dixmude is not to the point here, because it was not only too short for the numbers engaged to admit of a genuine surprise, but also because the Germans never really succeeded in obtaining a sufficient fire superiority, except quite locally, and for an insufficient time.

The Rhine, however, is some 400 miles in length from Basle to the Dutch frontier, and is navigable throughout the whole of this course.

It is also everywhere so wide that unless it is illuminated from end to end by flares, star-shells, or searchlights—a somewhat large order—ordinary darkness is quite enough to hide the movements of men on the one bank from sight on the other side of the river, except where it runs between rocks, i.e., from Bingen to Coblenz. From below Goar to Bonn the clay banks, some 15 feet sheer, are covered with reeds and scrub, giving concealment from anything except aeroplanes.

Behind this screen the concentration of men and gear necessary for the construction of rafts or bridges has always been made.

Below Cologne—indeed, in several other places—where the river widens out, the breadth is too great for the fire of the old-fashioned muskets to reach across it; even the field artillery of Napoleon's time did not effect much damage against such targets as the enemy allowed them to see.

The boats attempting the crossing therefore had to face the unshaken—i.e., aimed fire of the defenders, which up to 200 yards was about as accurate as that of modern rifles at 800, and there was then no shrapnel shell to compel the attackers to keep their heads under cover.

Of course the assailant always tried to surprise an unguarded passage; very generally he succeeded in so doing. But he could never be sure that his surprise would in fact materialise; consequently he had to set his teeth and be prepared for the worst before making the attempt.

At the present time, thanks to the increased range of all arms and to the immensely augmented power of our shells,

the conditions have altered enormously in our favour. I use the word "enormously" with deliberation, and not loosely, because it is impossible to give an exact numerical ratio to define it.

But let anyone who wishes to arrive at a real approximation of the advantages we now possess, take a scale map of any big river running through plains or lightly rolling country, and having selected any point for crossing, strike two arcs from it—one of 3,000 yards, the other of, say, 12,000—and then calculate the area enclosed between them which would be available for placing his covering batteries.

Then remember that the advantage accruing is not only due to the greater opportunities for concealing his guns afforded by the outer area, but also to the ampler space secured for the placing of still more batteries—which do not need to be in one line nowadays, but can be arranged behind and in front of one another to fire over each other's heads.

You can have either perfect concealment and fewer guns or less concealment and more guns, but the advantage is always partial concealment and in proportion a greater number of guns.

On such an area you could in fact place all the heavy batteries of the French and British Armies without serious inconvenience to one another, and thanks to our aeroplane ascendancy, you could converge all their fire on a single point of your own choice.

The passage of a river is in fact only the same problem of the assault on Neuve Chapelle, for example, with the advantage thrown in that a close fire defence of the last 100 yards or so is quite impossible owing to the sheer fall of the banks into the river.

Trenches could not exist on this slope in view of the enemy, and the firing line must of necessity be drawn well back from it, while we, on our side, can scarp down the edge of the bank, and convert it into a firing position for our subsequent advance.

Moreover, by the time we reach the Rhine—and that may not be long ahead as things are going now—the quality of the troops opposed to us will be very much lower than those we have already faced, and, after, all, whatever may be the nature of an obstacle, it is not the natural impediment to physical progress that signifies, but the courage of the men who stand behind it.

This subject is of such great practical interest at the moment to those of our men who will have to undertake the exploit of carrying the Rhine, that I would suggest to my readers to secure, if possible, some military histories of classic passages of rivers, *with maps*, and send them out to their friends in the trenches, so that the men may be familiarised by lectures, given in billets, with the real nature of the task before them.

Jourdan's passage of the Rhine at Neuwied in 1794; Napoleon's passage of the Danube at the Isle of Lobau, in 1809; the Russian passage of the same river below Silistria in 1877; are instances which occur to me.

No very precise detail is needed; the essential point can easily be brought out—viz., the increased area between the two arcs referred to above for the placing of the guns. This can be convincingly shown with a blackboard and chalk; failing that, the diagram could be drawn with a stick on the ground.

The essence of the thing is that what our ancestors did that we can also do, more especially since we now possess an overwhelming advantage on our side.

That much of the correspondence that has been addressed both to the Editor and myself on military matters has been unanswered must not be regarded in any way as an act of discourtesy, but has been due to the ill-health of the writer, who hopes to deal with them at an early date.

A Wellington and Waterloo loan collection of pictures, trophies, &c., in this centenary year of the great battle, is contemplated in aid of Queen Alexandra's Field Force Fund; and the Hon. Charlotte Knollys, at Marlborough House, has addressed a letter concerning it to Mr. J. Landfear Lucas, of the Hurlingham Club and the Spectacle Makers' Company.

At the Annual General Meeting of the Hunters' Improvement Society it was unanimously resolved that the sum of £25 should be allocated for the relief of sick and wounded horses in the War. After considering the claims of the Blue Cross Society and of the R.S.P.C.A. Fund for sick and wounded horses, the meeting decided that the sum voted should be equally divided between the two above-named Societies.

CORRESPONDENCE.

AN APPEAL.

To the Editor of LAND AND WATER.

DEAR SIR,—After the outbreak of the war my husband and I, wishing to do "our little bit," subscribed over £100 towards the war relief funds and gave hospitality to several Belgian refugees.

But when Lord Kitchener's appeals kept coming for more men and still more men, my husband decided that he ought to offer himself, so he threw up his business and also resigned a working directorship bringing him in £300 a year and joined as a private in the O.T.C.

He has just now got his commission and finds himself straitened in means for the purchase of needed extras.

So I write to ask you if you would be so good as to insert this letter in your paper in case any of your readers feel disposed to lend to my husband for the period of the war any of the following:

A pair of binoculars.

A revolver.

A sword.

A prismatic compass.

Credentials would be sent to any persons good enough to offer such welcome help.—Believe me, yours faithfully,

OFFICER'S WIFE, K.A.

N.B.—Replies to this letter should be addressed to the Editor, LAND AND WATER.

AMBULANCE.

To the Editor of LAND AND WATER.

DEAR SIR,—Since the middle of December I have been in France and Belgium attached to an Ambulance Corps, but owing to various reasons we have never been able to do the work we expected to. I and two others have now left the Corps and are very anxious to get to work. I should be glad if you could kindly put us in touch with any body which would be glad of our services. I have a beautiful ambulance to accommodate four stretchers or ten sitting-up cases, and drive and care for the car myself, and hold First Aid certificates. Mrs. Campbell cooks, drives, nurses, and does First Aid. Mrs. Ore-Paterson is a trained nurse. Our services are given voluntarily. We are willing to go to France, Belgium, Serbia, the Dardanelles, anywhere at all where there is plenty of hard work. Our reason for leaving the Corps was that we realised the impossibility of a private unit ever being allowed to work.

If you could give me the names of any units needing help to whom we could apply, I should be most grateful.—Yours truly,

(Miss) O. KELSO KING.

Sweethaws Grange, Crowborough, Sussex.

KHAKI.

To the Editor of LAND AND WATER.

SIR,—It may interest your correspondent B. W. Stainton and others of your readers to know that khaki was used for military uniforms in India in 1857. Dunlop's Khaki Risala, of which my father was a member, was a Volunteer Force of cavalry raised at Meerut during the Mutiny, and did very good work in that district. I believe their uniforms were dyed with a reddish-brown earth called "Multani Mutti." The only really fast khaki dye I know which will stand repeated washing without losing its colour, and I have tried many, is that invented by the firm of Lehmann and Gatty.

Khaki, of course, is the Hindustani for dust.—Yours faithfully,

INDICUS.

Pokesdown.

MOTOR AMBULANCES NEEDED.

To the Editor of LAND AND WATER.

DEAR SIR,—This will be "world without end" so long as it is left to private owners of cars to give them free, gratis, and for nothing. Our soldiers are wounded in the service of their country, and for this service funds are provided by their country. Why should it stop short there and say: "Now we have done with you, find some good samaritan to come and help you and set you on his own beast"? Surely it is up to that same country to supply the beast. If it will do this there will be an ample supply of samaritans.

Because people have been able to buy a car—often at considerable sacrifice—why are they to be expected to give it up any more than those who have horses, and vans, and lorries, for nothing?

There is an enormous amount of cars so owned in the country which would at once be at the disposal of the Red Cross or any other hospitals if the owners were guaranteed that their cars would be replaced at the end of the war or if a fair sum would be given for them at the start; and, more than this, the owners would in many cases be willing to give their services free if it were demanded for the conveyance of the wounded from field to hospital. If it was clearly understood that no car would be accepted unless it were strong and serviceable as to chassis, sound in every way as to engine, and drivers must be thoroughly competent for the work, and the owners would be at no loss, there would be an ample supply of cars and drivers for all requirements, and the pitiful tale of the wounded left for hours and days untended would cease. Many cars would be useful as they are. In the case of ambulance bodies being required, these ought to be supplied, and not left to the owner to rig up a body which "ought to do."

For this purpose cars should be really good, well hung, and well sprung; thereby much suffering will be saved to the wounded, for whom they are intended. Now that the large stock of second-hand or, to speak more truly, tenth-hand cars has been exhausted and left in the Belgian or French ditch, the good and sound car will come into use. I know, because I have seen that the depots for these have been practically cleared out; and at one of the largest in the country I was told by the manager that the ambulance had been a godsend to them, as it took all the old chassis which they had had in stock for years, and had given up all hope of selling. This is not the kind of ambulance to offer to a wounded man, nor can it be sound business to use a worn-out article which must be left by the roadside in a few days.

This is a War Office job and should be taken in hand at once.—Yours faithfully,

HERBERT OKEDEN.

THE SMALL FIRM.

To the Editor of LAND AND WATER.

SIR,—In a recent issue "One of the Principals of a Small Firm" laments that orders for war material all go to the big manufacturers.

Your correspondent is evidently not a manufacturer of textiles, or he might have a different tale to tell.

The experience of those in the textile trades is that as often as not manufacturers, both large and small, are passed by altogether, and the contracts are given to middlemen, who may know nothing whatever about the goods they handle. Over and over again has it happened in Lancashire and Yorkshire that a manufacturer sends in his tender, and after some weeks' waiting receives the official intimation that his offer is declined, and then a few days later sells the identical goods to a middleman (the successful tenderer) at a higher price than he quoted direct.

The soldiers' clothes and equipment bear, accordingly, two profits, though there is evidently no valid reason why they should bear more than one. As to how this comes about, there may be various opinions. Among disinterested observers there can be but one opinion as to whether the public good is served thereby.

Yours faithfully,

"ONE OF THE PRINCIPALS OF A LARGE FIRM."

50, Piccadilly, Manchester.

CANADIAN RED CROSS.

To the Editor of LAND AND WATER.

DEAR SIR,—May we ask, as a great favour, that the accompanying notice be inserted in LAND AND WATER:

The Information Department of the Canadian Red Cross Society, 14, Cockspur Street, gratefully acknowledges the many generous offers which have been made to it on behalf of the sick and wounded of the Canadian contingents.

Offers of private hospitality, of drives for convalescents, of singing in the hospitals have all been noted, and will be made use of as occasion arises.

For the present the number of voluntary visitors to the hospitals in London is sufficient.

Thanking you for your kind consideration, sincerely yours,

(Lady) JULIA DRUMMOND.

Canadian Red Cross Society, Cockspur Street, S.W.,

LETTER CASES.

To the Editor of LAND AND WATER.

DEAR SIR,—Finding that there is a great demand for small waterproof pocket letter-cases for the soldiers, I am employing some women out of work to make them.

They measure $6\frac{1}{2}$ by $4\frac{1}{2}$ inches, are light in weight, and contain writing materials.

I can supply them at 9d. each, which covers cost of material and making and leaves a surplus over to hand to the Red Cross and St. John Ambulance Societies.

The cases were greatly appreciated during the South African war, and I have sent many to the front now.

I shall be very glad to receive orders.—Yours truly,

C. MINNIE GREEN.

The Moorings, St. Albans.

SIGNALLING IN THE FIELD.

To the Editor of LAND AND WATER.

SIR.—Morse and semaphore, with flag, or disc, or hand, have each marked disadvantages. Morse is slow to send—semaphore requires quite six feet of cover behind the sender. I suggest the following method of rendering semaphore less conspicuous:

Substitute for the lowest radii a wave of the flag from B to F and back and from F to B and back—e.g., A becomes a wave of the flag from B to F and back, G a wave of the flag from F to B and back, I a sign—left hand as at present at C right, a wave of the hand from B to F and back, N crossing waves from B and F. The time lost to semaphore A, G, H, I, K, L, M, N, Z, X, V, wave, and S is at the most one letter for letter. Time still gained over Morse all other letters except T and E (perhaps I). In the suggested code A = about—, G = about — . . . less one —, H = about . . . less one ., I = . . . plus one ., K = — . . . less one —, and so on.

A man sitting down could use this code with his hands or with discs and be screened by a fair-sized bush. In this country a gorse bush would cover a man sending by hand, sitting down. Would it cover him standing up or kneeling? The answer is, very rarely.—Yours truly,

"FLAGWAG."

Bath Club, Dover Street.

SUBMARINE CHASERS.

To the Editor of LAND AND WATER.

SIR,—I read with great interest the proposals put forward by your correspondent "J. R." in your issue of March 20. As I am of the opinion that it is quite practicable to evolve a satisfactory "submarine chaser" on much more modest and economical lines than those suggested by "J. R.," it is possible that you may consider the following as being of sufficient interest for publication.

As a beginning I may say that I agree with your correspondent's general conclusions as to speed, armament, &c., except that I consider that a speed margin of 10 to 12 knots quite sufficient for the purpose.

My objection to the vessel proposed by "J. R." is that it would be unnecessarily expensive and that it would require too large a crew to operate. Incidentally I may point out that your correspondent's proposal is similar in almost every respect to the "30 knot" destroyers turned out in the later 'nineties, which were 210 feet long, 350 tons displacement, 6,000 I.H.P., and 8 feet draught. This type, however, carried the comparatively powerful armament of one 12pr. Q.F., five 6pr. Q.F., and two torpedo tubes, and consequently if brought up to date would be better vessels than that proposed by "J. R."

Now as to an alternative. There are in the French Navy three or four score "Torpilleurs de Defence Mobile," Nos. 295-369, built 1903-1909, and having the following characteristics: Length 122 feet, displacement 97 tons, 2,000 I.H.P., and 26 knots speed. These handy little craft are armed with two small Q.F. guns and three torpedo tubes. What we want is something a little lighter and faster; a compromise between the French boats and the *Turbinia* would about "fill the bill."

The *Turbinia*, mentioned by your correspondent, was 100 feet long, 44 tons displacement, 2,300 I.H.P., and $34\frac{1}{2}$ knots speed.

The approximate particulars of the type I suggest would be as follows: Length, 105 feet; beam, 12 feet 6 inches; draught of hull, 4 feet; extreme, 5 feet; displacement, 75 tons; I.H.P., 1,800; speed, at least 28 knots. The speed estimate is modest, as it is based on an Admiralty co-efficient of 200, whereas the corresponding figure in the case of the *Turbinia* was over 220. The machinery would be either turbine

or internal combustion engines of the same type as installed in submarines. Possibly the latter would be preferable as being already a standard pattern and capable of quick and easy manufacture.

The armament would consist of a 12pr. Q.F. forward and a 3pr. Q.F. aft, on an anti-aircraft mounting. I have not been able to investigate the weights of such a vessel in detail, but it might also be possible to mount a torpedo tube.

A vessel such as I have proposed would not cost more than one-third of the cost of the type proposed by "J. R.," and could be manned by a crew proportionately small. There are many small yards in which vessels of this kind could be built without disturbing the supply of the present needs of the Government, and they could be largely manned from the ranks of the Motor Boat Reserve.—Yours sincerely,

J. D. C.

Glasgow.

OUR MOTOR AMBULANCE APPEAL.

AN EXCELLENT START.

By ATHERTON FLEMING.

IT is my very pleasant duty this week to announce that at the time of going to press we are in receipt of a large number of subscriptions for the benefit of this fund, the amounts varying from one shilling to thirty pounds. The first appeal to our readers has produced nearly one-quarter of the amount asked for. This is exceedingly satisfactory, and no more than I expected from the readers of LAND AND WATER. Nevertheless, more money is wanted, and, for the benefit of those who have not as yet read the appeal which appeared in our last issue, I reproduce hereunder this rough outline of the scheme:

1. That a subscription list be opened with this issue of LAND AND WATER for the purpose of raising the sum of £500.

2. That this sum be devoted to the purchase and equipment of a suitable motor ambulance, containing accommodation for four stretcher cases and alternative accommodation for "sitting-up" cases and orderly.

3. That the chassis be of a well-known and reputable make—to be decided later—and the construction of the body be handed over to an expert ambulance-body builder.

4. That details of equipments, such as lighting, &c., be left to the discretion of Dr. Munro, owing to his better knowledge of the conditions under which he has to work.

5. That the motor ambulance—which will bear an inscription: "Presented by the readers of LAND AND WATER to the Munro Field Ambulance"—shall be handed over to Dr. Munro for use with the Belgian Army.

6. That should there be any balance in hand after the purchase and equipment of the ambulance the decision shall rest with the proprietors of this journal as to whether it shall be handed to Dr. Munro for the maintenance and upkeep of the presentation ambulance or used in the nucleus of a second fund for the provision of another motor ambulance.

7. That all cheques, postal orders, or money orders should be made payable to "LAND AND WATER Motor Ambulance Fund" and crossed "London County and Westminster Bank, Ltd." The address of this journal is Central House, Kingsway, London. All subscriptions will be acknowledged by the proprietors of this journal.

We are on the eve of great events—of fierce fighting on both sides, decisive battles which will decide the fate of nations. Every little thing one can do to help should be done. The LAND AND WATER Ambulance scheme is but a very, very small effort to help in some material way, and the ambulance itself will be, I hope, ready to do its share just about the time when every available help is of vital importance. Belgium's brave army is rapidly being got ready for its dash at the enemy, when the word is given. Remember that the Belgian army is dependent upon us and that they are only waiting for the time to come when they can avenge the cruel outrage of their country. What they have suffered is for the sake of Britain. Please let them see that we appreciate their sacrifices, and that, when the great forward movement takes place, they shall go into battle knowing that at least one more unit has been added to the little fleet of ambulances commanded by the man who has already done so much for the Belgian wounded—Dr. Hector Munro, to wit.

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SHEFFIELD.

The Truth about Apollinaris

*I*N view of attempts to create undue prejudice against Apollinaris, the public will be interested to know the true facts of the case.

Apollinaris & Johannis, Ltd., is a British Company with 4,500 British Shareholders, who have invested over £3,000,000 in the Company and who hold 97% of the total capital.

At the commencement of the War the German Government, recognising the British interest in Apollinaris, placed Supervisors in control of the spring in the same way as the British Government has appointed Supervisors in control of some concerns in this country, where German interests are paramount.

Apollinaris water is a natural product of the soil and comes from the Apollinaris Spring, situated in the Rhine Provinces.

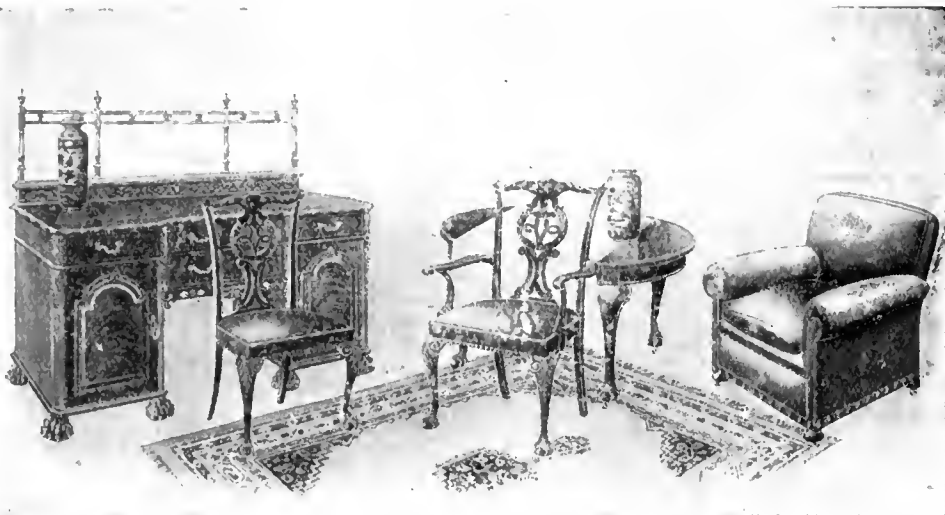
In 1872, a British Company, recognising that the waters of the Apollinaris Spring were greatly superior to those of any other known mineral spring, successfully secured for British interests the world-wide distribution of this famous table water.

Since its foundation 43 years ago, the business has been carried on under a Board of Directors consisting entirely of British subjects.

Attempts to create prejudice against Apollinaris can, therefore, only damage the interests of a British Company and its 4,500 British Shareholders.

Whiteley's Furniture

In our Furniture Galleries you can inspect the most complete collection of Furniture and Furnishings, and everything offered carries the Whiteley note of sound construction and supreme value.



Superior Dining Room Suite, constructed of Mahogany, and well finished, designed after Chippendale.
6 ft. Sideboard, with very fine figured wood, and ornamented brass gallery, £30 : 0 : 0.
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Luxurious Easy Chair, upholstered in best Morocco, hair stuffed, £14 : 10 : 0.

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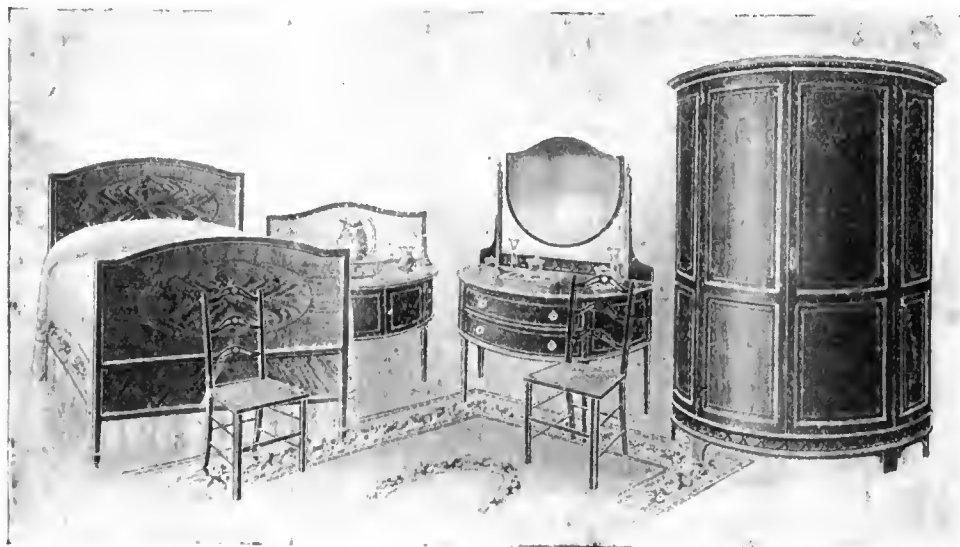
If you so desire you may furnish out of income at Whiteleys.

All goods are supplied at the marked cash prices. A deposit of 10 per cent. of the total purchase is required, and payment of the balance may be extended over a period of one, two, or three years, according to the value of the goods selected. The only addition to the net cash price is interest at the rate of 5 per cent. per annum on the outstanding monthly balances.

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This is a perfect guide to furnishing the home with taste and economy. It includes complete estimates for furnishing flats or houses for £105, £165, and £200, showing every item in detail.

Write to-day and we will forward you a copy by return post free.



High Grade Bedroom Suite, constructed of well seasoned Mahogany, and finished as antique. The Wardrobe, Dressing Table, and Washstand are half-circular in shape. The Suite complete, £38 : 10 : 0.

4 ft. 6 in. Bedstead en suite £9 : 9 : 0.

Wm. Whiteley Ltd., Queen's Road, London, W.

CHOOSING KIT

Practical Hints

THESE articles are written from practical experience of military matters, with a view to keeping our readers in touch with the various requirements of active service. Changes of climate and the peculiar conditions under which the present campaign is being waged render different items of equipment advisable at different times, and we are in touch with officers at the front and others from whom the actual requirements of officers and men can be ascertained. The articles are not intended to advertise any particular firm or firms.

We shall be pleased to supply information to our readers as to where any of the articles mentioned are obtainable, and we invite correspondence from officers on active service who care to call our attention to any points which would be advantageous in the matter of comforts or equipment, etc., to those who are about to leave for the front.

Letters of inquiry with reference to this subject should be marked "Choosing Kit."

Aluminium Perfected

Hitherto, the drawback of the aluminium water bottle has laid in its joints. It is impossible to solder aluminium in the way that is pursued with tin, and consequently the Service pattern of water bottle in aluminium has been a failure, for a certain percentage of these jointed bottles leaked at the joint even when new, and the rest could not be depended on not to leak at some inconvenient occasion, while the material used in closing the joints of the metal lent itself to corrosion if anything but pure water were placed in the bottle. There has now been evolved, however, an aluminium water bottle, of the ordinary Service shape and size, "spun up" out of one piece of aluminium, without a single seam. It has no sharp internal angles; it has the freedom from corrosion peculiar to pure aluminium; it is the lightest serviceable water bottle yet made; and it will stand the hard wear of active service as long as a man is likely to require it. Strongly covered and fitted into a "cradle" for attachment to equipment, it is a practical article built on common sense lines, and thoroughly to be recommended for hard Service use.

A Waterproof Cape

In the matter of keeping out the rain one sometimes needs additional protection to that provided by the regulation or other coat one has taken, and for this purpose a waterproof cape, designed by an officer, on practical lines seems about the best thing. The cape in question is not supposed to take all the work of waterproofing, as a coat does; it is designed so as to cover one almost to the knees, giving plenty of freedom to the arms and plenty of room inside, and is provided with its own fastening strap so that it can be attached to the equipment when rolled up. It rolls into a very small compass indeed, and its weight is a matter of ounces only. This particular cape has found many patrons among men actually serving in the trenches, and its extreme portability is a great point in its favour.

A Cap Cover

Passing reference was made a few weeks ago to a waterproof cap cover which protects the back of the neck by means of a flap extending down over the collar of the coat, and, with spring weather coming shortly and the need for heavy balac-lavas disappearing, this cap cover is worthy of notice. It fits over the field-service cap and transforms this into a head covering something like the old-time head-dress of the Indian Army, by means of which the back of the neck is thoroughly protected. With even a closely fitting overcoat collar the water drips down the back of one's neck and causes exasperation, but this curtain, falling over the collar, saves all that, and completes the equipment for keeping out the wet at all points.

By Way of Correction

In referring to a folding open periscope a week or two ago, reference was made to the clips which support the mirrors of this particular pattern in such a way as to imply that these clips were not of sufficient strength. After re-examination of the clips—especially those of the larger pattern instrument—I am convinced that only very rough usage indeed would impair the efficiency of this periscope. I make this

(Continued on page 9)



Oilskins, in various shades, non-sticky. Colours, brown and green. Unlined, from 22/- Lined fleece - - 50/-



Khaki Flannel Shirts, with a detachable collar to each, good quality, durable and unshrinkable - - each 6/6

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Easter Sale OF Men's Wear

FROM now until Easter we are offering some very special bargains in shirts, pyjamas, men's wear—especially in Khaki clothing of all kinds—in our well-known and reliable makes.

Of Special Interest to Officers

Silk and Merino Underwear, ideal for summer wear, in cream, grey, pink, blue and helio, unshrinkable.

Vest, 6/6 Pants, 7/6 Drawers, 6/11
Khaki Wool Socks, good, heavy ribbed make, durable and well fitted for marching Per pair 1/6

Weatherproof Overcoat, full shape, Raglan shoulders, light weight. Price 42/- to 63/-

Mackintoshes, fawn colour - from 25/6

Ditto, Regulation - - - 63/-

British Warm Coat, lined fleece 55/-

Our own material, special quality - 75/-

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OFFICER'S WATERPROOF, lined fleece, guaranteed waterproof. An ideal Service coat - Price £ 5 5 0

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"I have given one of these coats a personal trial under bad winter conditions of weather, and have found it all that could be desired in wet and in cold. The proofing is of the very best quality, really proof against a soaking rain for any length of time. A further point in its favour is that it is thoroughly well ventilated, and altogether it seems about the best all purposes coat that one can obtain."—Author of "Choosing Kit" Article, LAND AND WATER, Feb. 13, 1915.

MAP CASES, khaki canvas, double fold - £ 16 6

Do. do. three fold - 17 6

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POCKET FLASK, oxydised, plated inside, non-corrosive. Strong and light - 14 6

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Valises - - - from 63/-	Active Service Knives - - 15/-	Water Bottles - - - 10/6
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OFFICER'S FIELD KIT (War Office sealed pattern). Compactum Bed and Horsehair Pillow in green Willesden canvas, War Office Bag, Folding Bath and Washstand, Water Bucket, Folding Chair, War Office Ground Sheet, Brown War Office Canvas Kit Bag with lock . . . **£7 : 10 : 0** NET CASH

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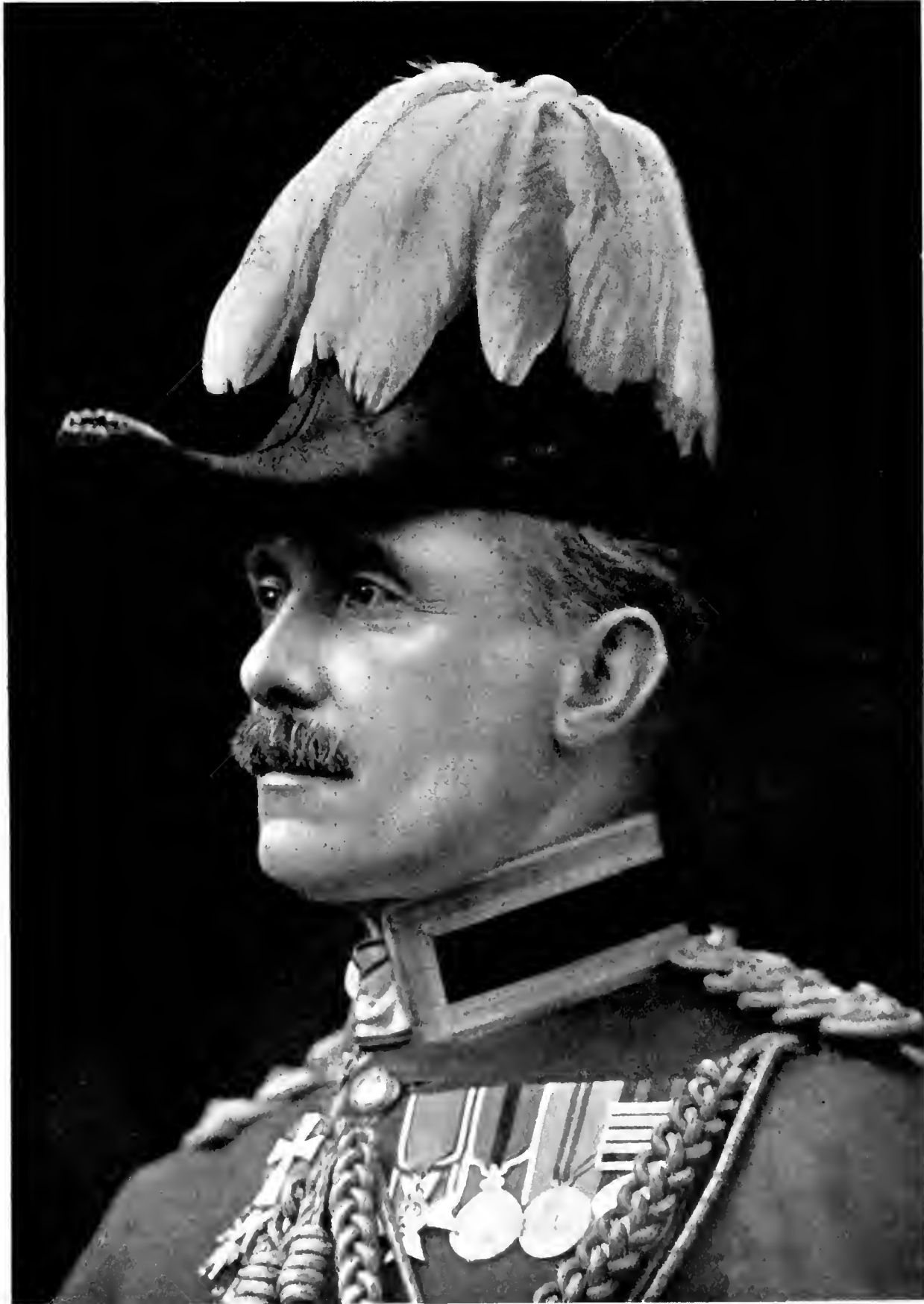
The County Gentleman AND LAND & WATER

Vol. LXV No. 2761

SATURDAY, APRIL 10, 1915

[PUBLISHED AS
A NEWSPAPER]

PRICE SIXPENCE
PUBLISHED WEEKLY



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BRIGADIER-GENERAL N. W. BARNARDISTON

Who Commanded the British Forces co-operating with the Japanese at the Siege of Tsingtao.

Distinctive Tailor Gowns in the New Spring Mode

JUST as "Land and Water" has built up a name for authenticity in Naval and Military matters so has our REGENT STREET House earned fame for Authentic Fashions.

And further—the Fashions shown in our Regent Street Salons are always in good taste—the qualities are sound—and the Values unsurpassed. Just now the Spring Costume Styles are the special attraction and some particularly interesting creations are shown in Tailor-made Gowns. Note the two examples pictured :—

R.S. 22. C. Coat and Skirt in Covert Coating. Plain Skirt with double box pleat at back; Coat cut rather shorter in front, back panel ending with box pleat; high roll collar. In a variety of materials. 6 gns.

R.S. 21. C. Well-cut Coat and Skirt. Coat cut on newest lines, rather shorter in front than behind, fastening with straps and ball buttons; collar of black edged black and white cord. Skirt in latest style cut very full. Made in our own workrooms in a variety of materials to order. 8½ gns.

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R.S. 22. C.

R.S. 21. C.

The reason for the smiling face—

HORLICK'S MALTED MILK TABLETS

Think what a blessing these delicious Food Tablets are to men on active service. — They are always ready for immediate use, and a few dissolved in the mouth will maintain the strength of the Soldier when he most needs it. They supply sufficient nourishment to sustain for hours; give increased body heat and vitality; prevent fatigue, and relieve thirst.

Send a Flask to YOUR Soldier.

We will send post free to ANY address a flask of these delicious and sustaining food tablets and a neat vest pocket case on receipt of 1/6. If the man is on active service, be particular to give his name, regimental number, regiment, brigade and division.

Of all Chemists and Stores, in convenient pocket flasks, 1/- each. Larger sizes, 1/6, 2/6 and 11/-

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When your system is undermined by worry or over-work —when your vitality is lowered—when you feel "any-how"—when your nerves are "on edge"—when the least exertion tires you—you are in a "Run-down" condition. Your system is like a flower drooping for want of water. And just as water revives a drooping flower—so 'Wincarnis' gives new life to a "run-down" constitution. From even the first wineglassful you can feel it stimulating and invigorating you, and as you continue, you can feel it surcharging your whole system with new health—new strength—new vigour and new life. Will you try just one bottle?

Begin to get well FREE.

Send for a liberal free trial bottle of 'Wincarnis'—not a mere taste, but enough to do you good. Enclose three penny stamps (to pay postage). COLEMAN & CO., Ltd., W212, Wincarnis Works, Norwich.

WINGARNIS

THROUGH THE EYES OF A WOMAN

By MRS. ERIC DE RIDDER

A Vanished Type.

ONCE upon a time a very clever, humorous artist drew a very clever, humorous picture called: "The Lady Who Will Not Be Ignored." There she was, as true to type as anything ever put upon paper. It was the day when skimpy skirts, gigantic hand-bags, and hats with sky-scraper plumes almost as tall as their wearers, were indicated to a long-suffering public. Some women compromised, adopting the fashions with modifications as Englishwomen very frequently do. Others flatly refused to have anything to do with the modes at all, and a third class went to the other extreme. They wore skimpier skirts, more aggressive hats, and carried more arm-breaking and colossal bags than anybody else. They were determined to make an impression, resolved not to be overlooked. Among them was "The Lady Who Will Not Be Ignored"; the flamboyance, and fun, and foolishness of the thing was irresistible. That perhaps was flamboyant fashion at its height. But though the fashion died, flamboyance continued to flourish in various stages and degrees. And now it has vanished from our midst very quietly, very suddenly, very unmistakably. Coats and skirts are our staple form of wear. All the big shops say that they are selling little else. There is a ban on bright colours, there is a ban on exaggeration of design. In a word, we are unobtrusive. Good taste in clothes has become a shibboleth. It is amongst the first fruits of the war, and a result with which few will quarrel. The passing of the Flamboyant Lady, indeed, is a relief both to the eyesight and mind.

The Business Side.

It is one thing to provoke interest, quite another to keep that interest maintained. Every promoter of a charitable scheme realises that. Public support is certain to flag if public interest be not carefully cultivated and nurtured. Even the best of causes is apt to suffer, if its virtues, its aims, and its workings be not continually trumpeted abroad. It is one of the sad proofs of the fickleness of human nature. It is a proof, also, of its forgetfulness if reminders are not constantly forthcoming. That being so, it seems amazing that the business side of a big charitable undertaking is so repeatedly neglected. Appeals are often couched in the prehistoric language of charitable officialdom. They are conventional, monotonous and lifeless. And in consequence they fail in their object, or at any rate reap no full measure of success. It would be well worth many a society's while if those responsible spent part of the funds upon the salary of an expert advertisement writer. Its cause may be one of the best on earth, but it is not always enough to allow this to speak for itself. Somebody well graduated in the art must speak for it. And this not once, but many times, if the funds are to continue growing. If a society is to flourish, it must be run upon the lines of an up-to-date business establishment. The societies which do flourish are those who realise this, and pave the way for funds as the shopkeeper paves the

way for a sale. In the first days of the war, it is quite likely that calculated pleading on behalf of a cause was not necessary. Organisations first in the field had the advantage of an awakened interest. Everybody was eager to help and attention very alive. Time has passed, and there is, perhaps, a plethora of charitable endeavour. It will be a case of the survival of the fittest. The fittest, not only in object, but in presentation of that object to the public upon whose support it depends.



Copyright, Madame Lallie Charles.

LADY WIMBORNE

Who has helped to dispatch a Nursing Unit to Serbia, in response to an urgent appeal from those in authority there. Lady Wimborne is the new Vicereine of Ireland, her husband having been chosen as successor to Lord Aberdeen

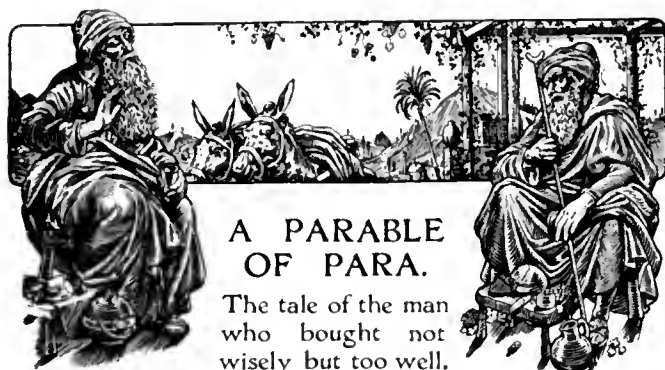
The "Land and Water" Motor Ambulance.

War is so much a man's business that we women are only too glad to find any way in which we can help. If we cannot fight our country's battles directly, we can certainly do so indirectly by helping those men who are fighting for us in the allied cause. It is, as a matter of fact, almost the sole way in which we can help, and that being so, it is fortunate it happens to be an unusually important one. It is for this reason that the "Land and Water" Ambulance, through the very nature of its work, makes a special appeal to women. This has been proved by the generous way in which women have already subscribed towards it. Is it too much to ask that every woman reader of "Land and Water" will consider sending some sum—no matter how small—to our Motor Ambulance? It might perhaps be so were it not that the needs and sufferings of the wounded form an "Open Sesame" to every woman's heart, and that this

Ambulance will help one of the smallest and most suffering of the Allied nations, as those who read its particulars will discover.

The French Wounded Emergency Fund.

The strain upon our medical resources, naturally enough, brooks no comparison with that upon those of France. The French Army holds an infinitely longer battle-line, its casualties are proportionately great, and its hospital accommodation is taxed to the uttermost. The French Wounded Emergency Fund has its headquarters at 34, Lowndes Square, S.W., and through its agency medical stores and clothing are being sent across to France. We are, most of us, so well aware of the truth and limitation of the saying, that charity begins at home, that it is delightful to find an exception to the rule. Our own Medical Service is well organised and working splendidly, as the wounded back from the front testify over and over again. The French system is not working so easily, for the simple reason that there is a well-nigh intolerable demand upon the supply. The whole medical organisation is strained almost to snapping point; it might have snapped, indeed, if certain individuals by dint of almost superhuman efforts had not managed to prevent it. Here, once again, can we prove that we are Allies in the fullest sense of the word by helping the French Wounded Emergency Fund, which acts as a bridge between us and the wounded French soldiers. Its helpers meet the cross-Channel steamers, and see that the bales of goods are transferred without delay to the various French hospitals. Everybody with an affection for France has a golden opportunity for showing it by sending a present of money or clothing to 34, Lowndes Square.



A PARABLE OF PARA.

The tale of the man who bought not wisely but too well.

CHAPTER THE FOURTH.

AND they came to a house of rest and ordered wine. And he who had bought wisely spake thus: "In the beginning there was no shoe. And then there arose a wise man who bethought him of a shoe, and another there arose, far-seeing, who pictured all that it might mean. And after much labour and sore travail, the world saw that it was good. And the shoe spread till all the world made service of it, and many were the imitations of the shoe that arose, saying: 'We also are as this shoe, and even finer than this shoe.' So it has come to pass that he who would know the shoe he should buy is sore puzzled, for of the makers of shoes, one pulleth him this way and another pulleth him that way, till he knoweth not what he shall do. But I have travelled far and wide, and many are the shoes I have used, yet this is the shoe of all shoes that liketh me most. And, now, friend, we will eat, and then will I proceed with the tale of the shoe." *(To be continued.)*

MORAL:—Imitation is the sincerest form of flattery.

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DO you know that the Makers of the Sunbeam Cycle are the originators of the Little Oil Bath Gearcase? Do you know that this Gearcase forms an integral part of the machine and is not an "Afterthought"? That—after all these years of imitative effort—it is still the only satisfactory Oil Bath Gearcase? All the Sunbeam driving Bearings and the chain run in this Gearcase. There they are protected from Dirt and Damp, and continuously and automatically lubricated by the Little Oil Bath. This ensures the perfect running of the superbly built Sunbeam in all Weathers, and this guarantees their perpetual Wear.

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It is just as easy and no more expensive to obtain a watch with a tight-fitting dust-proof and damp-proof Screw Case, as to obtain one with a case that looks so, but isn't. Whatever watch you choose can be supplied in a



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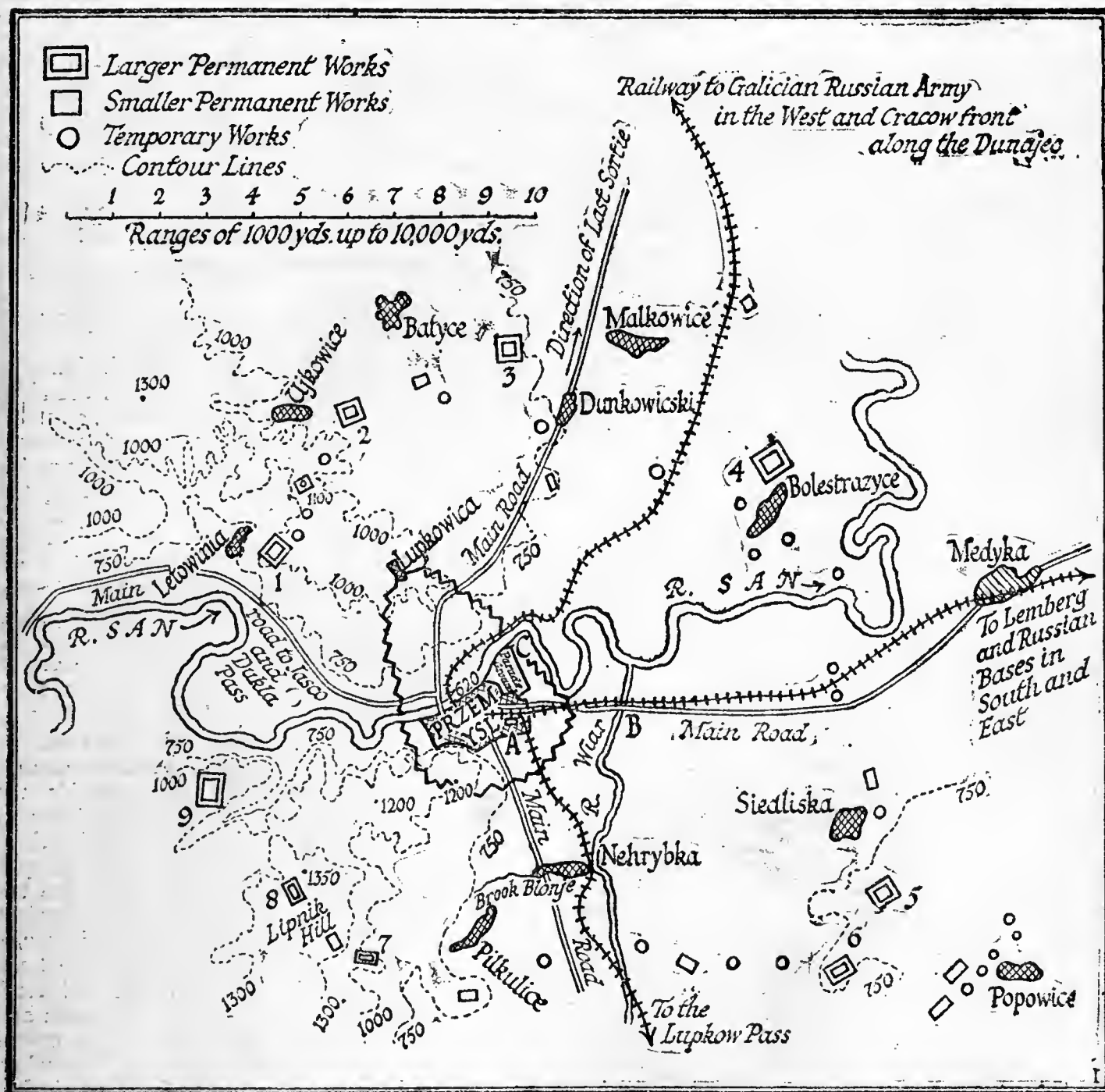
44 Holborn Viaduct, London, E.C.;
82 Victoria Street, S.W.; 98 Bishopsgate, E.C.

THE WAR BY LAND.

By HILAIRE BELLOC.

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THE DETAILS OF PRZEMYSŁ.

WE are now in a position, through the Russian Press, to grasp clearly enough the nature of the defence of Przemyśl. It will be remembered how at the time of the surrender all details were lacking, and it was impossible to do more than conjecture the most important points. Yet an understanding of Przemyśl was exceedingly important to a general understanding of the campaign, because the controversy upon the change in modern strategy had mainly turned upon the rôle of permanent fortification in modern war and because later phases of the war must, whatever happens, put that debated question again to the test.

Of course the greater part of the study of such

a case as that of Przemysl can only be accomplished upon the ground, and in the accounts received there are many puzzles, which only a knowledge of the ground could solve. Still, we know enough now to be able to draw certain conclusions, and, further, to be able to understand the nature of the operations.

I have given upon the accompanying sketch map the main features of the ground.

The town of Przemyśl stands at the point where the River San leaves the foothills of the Carpathians and enters the Galician plain. It is, therefore—more than most fortresses—a real door. So long as it is held, the main avenue across the Carpathians is closed. The trunk railway, which feeds all armies operating in Galicia and runs from the Russian frontier to Lemberg and Cracow, is deliberately bent

artificially round so as to pass through Przemyśl, and the fortifications of that town command the use of the line. Further, the railway over the Lupkow Pass, the most direct from Buda Pesth and Vienna, joins this main line at Przemyśl Station. This essential railway junction, the most important strategical point, perhaps, in all Galicia, I have marked upon the sketch with the letter A. The town itself, which is in normal times about as large in population as Colchester, and which is very mixed in race and creed (quite a third of it being Jewish), stands upon the right bank of the San, and the higher foothills which buttress the main range of the Carpathians here approach close to the stream from the south. The water level at the town itself is about 600 feet above the sea, while the hills in the immediate neighbourhood of the town to the south have summits more than 700 feet above this level.

The formation is continued on the north side of the river in hills only slightly less elevated and considerably softer in outline. A sort of rounded plateau here dominates the San, rising to a sort of backbone a thousand feet above the sea, or some 400 feet above the water, with its highest summit another 300 feet more. To the eastward opens out the great plain, through which the San runs with many turnings, bounded often by marshy fields and occasionally leaving stagnant backwaters, which represent its old course.

The town is not, therefore, one of those ideal ring fortresses which stand surrounded by fairly isolated heights. It is a site which has been fortified in spite of the difficulties attaching to the ground, and not on account of natural opportunities afforded.

Nine main works defend the place. They are often reckoned as eight on account of the proximity and common object, and probably the linking up also of the two works south of Sidelska, the south-easternmost horn of the ring. Taking these nine works in their order from the north of the river on the east, the first is on the spur of the thousand feet contour, overlooking the village of Letownia. It is supported at less than four thousand yards range by the second work, which is upon the northern summit of the plateau overlooking the village of Ujkowice. The first of these works is at about five thousand yards range, the second is nearly seven thousand yards range from the centre of the place.

The third fort is on the open glacis of the plateau, between the villages of Batycze and Malkowice. It is probably the strongest of all the works, with the possible exception of five and six. It dominates the great main road to the north, and is a good five miles (or eight thousand yards) range from the town.

The fourth work is at a rather puzzling distance away upon the east. A gap which can only be accounted for, if the information supplied is correct, by some peculiarity of the ground—possibly marsh. It lies but a little above the water level, and overlooks the village of Bolestrzyce. The gap between this fourth work and the fifth is even more remarkable, amounting, it would seem, to close on ten thousand yards. But, even without a knowledge of the ground, the map is sufficient to explain this, because there is a considerable area of marsh in the bends of the river that correspond with this gap, and because the main railway and

the road which come in from Lemberg through Medyka are thoroughly dominated by each work on the north and on the south.

This fifth great fort and the twin work, No. 6, close in its neighbourhood, have a characteristic that can only be explained by some feature in the ground. They are very far thrust out from the fortress, and they are evidently regarded as guarding a joint in the armour, because a whole system of smaller works, temporary and permanent, have been thrust out beyond them towards the hills in the neighbourhood of the village of Popowice. Another big gap occurs between fort six and fort seven, which overlook the valley of the little tributary river, the Wiar, from the east and from the west. But after this fort seven the rather abrupt and confused hill country to the west of it has been heavily defended.

Fort eight, on Lipnik Hill, is the highest in the whole system—1,350 feet above the sea and some 750 above the valley floor. It is only just over two thousand yards from its neighbour and not much more than three thousand from the ninth and last fort of the ring, which stands on an abrupt spur immediately overlooking the San.

Apart from these large works there are eight or nine smaller works, the general design of which is to close the gaps between the larger ones, and in the course of the siege a considerable number of temporary works were erected all along the ring, some of which are indicated upon the sketch.

In the immediate neighbourhood of the town a closed system of trenches was drawn to cover the last thousand yards or so of the approach, and was extended on the north-west up as high as the village of Lupkowica, upon the plateau, so as to prevent this outlying portion of the enceinte from being too immediately overlooked.

Now, the first thing that strikes us upon the inspection of such a system is the absence of that extension of temporary batteries *outside* the original ring which has marked the defence of Verdun, and which, it was guessed in these columns, would be found attached to Przemyśl. And the absence of these can only mean that the Russians could not, or did not, bring up against the place any very heavy pieces. For instance, there is a whole district north-east of the town where forts one and two are overlooked from further heights, which run up to 1,300 feet; and had Przemyśl been subjected to such an ordeal as the Verdun forts suffered in early September, fort one and fort two could have been knocked to pieces by indirect fire from behind these neighbouring hills as surely as Troyon was battered to pieces by the big Austrian howitzers hidden behind the heights of the Meuse.

This is of a piece with all we know of the siege. It was a mere investment; and the place fell, not from the piercing of any part of its armour, but from exhaustion.

In connection with this, however, it is interesting to note with what care the defence organised works and destroyed communications with the apparent object of fighting to the last, and only letting the place fall to an assault. No other explanation fits the tracing of that enclosed enceinte of trenches which covered everything in the immediate neighbourhood of the town, or the destruction of the main railway bridge over the Wiar at B, which so astonished the Russians when

they entered the city. The point B is amply protected by the ring of forts, and to destroy the bridge there, so as to cut the road and the railway communication from Lemberg, the chief sources of supply, has had no effect (considering that the fortress capitulated intact) save to hamper the revictualling of the place rather cruelly.

There are other small points in connection with the system, one of the most curious of which I have marked with the letter C. The trenches here did not follow the natural obstacle of the river, but ran inside it, just enclosing the parade ground. And still more remarkable is the care, already alluded to, which has been taken to guard in a special manner all the south-eastern approach in the neighbourhood of Siedliska and Popowice. One would naturally expect that the most vulnerable sector would be the north-east one; but there is doubtless some local reason for making the defence especially anxious for this sector defended by forts five and six.

THE CARPATHIAN BATTLE.

The news of direct and recent action this week is very scanty. The most important part of it is from the Carpathians.

It is annoying that a series of great actions upon which will, perhaps, depend a great change in the whole war, and the theatre of which is the Carpathian Range, should be so meagrely reported in the West. The great war is one co-ordinated operation, and the lack of full accounts of any decisive part of it makes it impossible to judge the condition of the whole.

From such information as we have, however, it is possible to construct some idea of the Russian advance, its rate of progress, and its critical points.

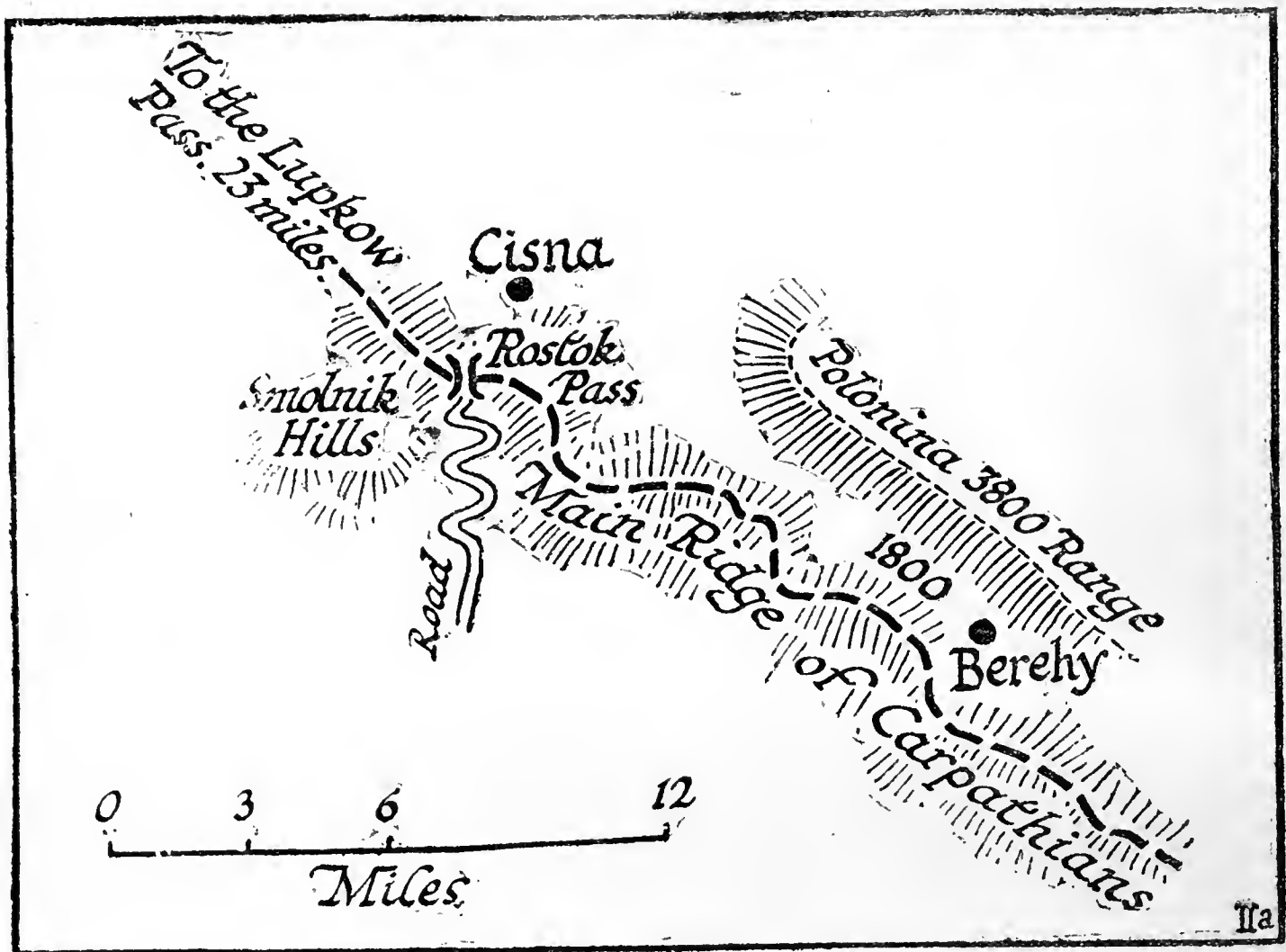
In the accompanying map we have all the points marked which have been mentioned in the last few dispatches, and from them we can discover pretty accurately how the Russian line lies. The point is, of course, to establish its relation to the main ridge of the Carpathian Mountains, which ridge is as it were the wall still defending

the Hungarian plain. That part of the ridge upon which the Russian effort is now being so weightily directed is called the Beskid Mountains, and the front of the Russian Army last Saturday would seem along this stretch to be as indicated by crosses as follows.

In the neighbourhood of the Dukla all the three road passes, the Polyanka, the Dukla itself, and the Jaliska, are in the hands of the Russians, but the position there would seem to be almost stationary. The foremost Russian line on the Hungarian slope beyond the ridge is much what we saw it was last week. The Austrian references to fighting near the railway at A, in the upper valley of the Laborecz, establishes a point there, but I think it is doubtful whether the road over the Lupkow Pass, cutting off the bend of the railway, is already in Russian hands. The railway at its summit certainly is not, for we are told that the Russians have taken the point B, the last station before the summit upon the Galician slope. Thence the line goes round in front of the high mountain village of Wola Michowa, and more or less follows, for the next twenty miles, the Polonina heights.

These heights are a wooded ridge parallel to and only just lower than the main ridge and watershed of the mountains which stands facing them over a deep valley to the south. The Russians in the last telegram received, which relates to Easter Sunday, report that they have actually got across the main ridge also at one point just east of the Rustok Pass. The situation here can best be understood by a reference to the following sketch: Between the Polonina Range (which is less abrupt on its northern or Galician side) and the Main Ridge in the Valley of Boreky, a profound ravine, some two thousand feet deep, into which the wooded Polonina crest falls very steeply and out of which the main range rises on the further side. All this valley and the district as far as Cisna has been abandoned by the Austrians, and just beyond Cisna the main range has been crossed, and the Russian outposts are on the further, or Hungarian, southern slope upon the steep forest buttresses of the main range, called the Smolnik





Hills. A second breach has been made in the line after the Dukla and about thirty or thirty-five miles away.

It is not clear whether upon the Uszrog Pass road they have a hold of Turka or no, but it is probable, and thence their front reapproaches the central range until it finds itself on the Stryj road opposite German contingents which hold the mountain village of Koziowa. Further east, the front hardly concerns the main Carpathian battle, for it bends back further and farther away from the mountains.

One may sum up the Russian position in the hills as it was at the end of last week by saying that the Lupkow Pass is within an ace of falling into their hands, that the whole ridge for more than thirty miles on, even in the neighbourhood of the Uszrog, is immediately threatened by their attack, which is now close up against the last summit, and that, in the sector between the Uszrog and the Stryj railways they are a distance varying from one to two days' march from the summits of the hills.

It is obvious that if Russian success should come in this neighbourhood it will, no more than the corresponding task in the West, take the form of a mere slow pushing back of the enemy. The fight is against a line which will either maintain itself, or break, or be compelled to take up some shorter position: and what that shorter position can be on the Carpathian front it is not easy to discover.

We know that in the West if the Germans should ever have to abandon their present 425 miles of line they have behind them a line nearly a fifth shorter, and yet another behind that, the best line of all, quite a third shorter than their present line. But there is no such choice for the

Austro-German forces in the Carpathians. They must hold the mountains or give them up.

They will have no such opportunity for the defence to which they are now reduced if they fall back into the open plain, or if they are found still unsuccessful in any counter-offensive when the snow melts and the new pasture comes in the openings of the mountain woodland. It is significant that very considerable German reinforcements are being sent to this front. But those reinforcements are not inexhaustible. If they number, as it is believed, already seven army corps, they have surely reached the maximum of the stiffening which they can here lend to an unfortunate ally.

Meanwhile, we must wait patiently to note week by week upon the map the nature and the extent of the Russian advance towards and over the ridge which, as I said at the opening of this, is, perhaps, at this moment the most critical field of the whole war.

THE RAID ON CHOTIN.

The present phase of the war, in which close grips are established over long lines of country and advance is either very slow, as in the Carpathians, or halted altogether, as in France, naturally tempts such forces as may be free for them to engage in *raids*. We had a Russian one on Memel the other day; we have had an Austrian one at Chotin; and we should doubtless have corresponding efforts in the West were they possible. As they are not possible, their place is taken by occasional dashes through the air, which, like these Eastern raids, are not exactly co-ordinated with any general plan, but are only intended for some local effect, or by similar dashes across the sea.

The history of this sort of operation is always the same. You may watch it at work in war after

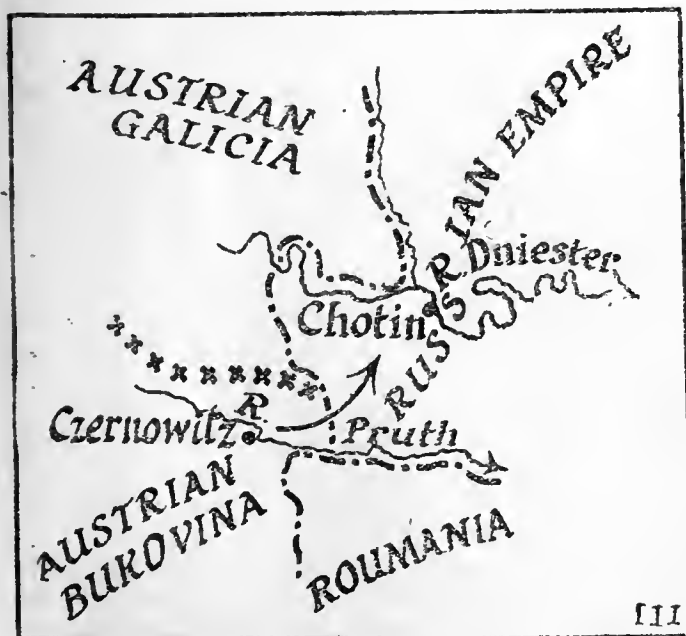
war. The raiders aim at nothing more than annoyance. They therefore work with the least possible numbers. The value of the annoyance they cause is strictly moral. The conditions under which it is worth while raiding and the conditions under which it is not depend entirely on the enemy's state of mind, and particularly on the state of his civilian mind and on the pressure that civilian mind can exercise upon the government and upon the army. No raid ever presupposes a permanent occupation. The success of a raid is to be measured by two things: the amount of damage done and the ultimate safety of the raiders.

Judged by these standards, the raid on Memel seems to have been fairly worth while; the raid on Chotin hardly worth while.

The Russian raid on Memel was undertaken because the whole German scheme depends upon the integrity of German soil. On that depends the opinion which is the foundation for the armies, and though Memel is but an extreme outpost, yet its temporary occupation profoundly affected the German mind. Indeed the whole of that East Prussian land has come to be for the Germans what a sore tooth is for a sleepless mind. Sometimes it stops aching, but it has ached and may ache again. On the other hand, the Russian raiders of Memel did not do anything like as much wrecking as they might have done, but they could boast that they escaped with very little loss—for the German accounts of their capture were almost certainly false.

The raid upon Chotin satisfies the criteria of a raid less. It was indeed undertaken by the Austrians with no waste of forces. It seems as though the whole body did not consist of more than one division of second-line troops with a brigade of cavalry. Moreover, this little force appears to have been roughly handled. We have only the account of one side so far, but the account is probable enough, because from the nature of the ground, as will be seen in a moment, the position of the raiders was always somewhat perilous.

It is not accurate to speak of the "wiping out" of the invaders, as it is put in one message, for the total number of prisoners does not come to much more than fifteen per cent. of the invaders.



But the division must have suffered heavily in killed and wounded as well, and it has certainly failed in its object. It has done very little harm in the district attacked, and even if it had been

more successful it would not have affected Russian opinion seriously. The eastern fighting, from the Baltic to the Black Sea, has taken place upon soil that is politically Russian, but the nationality of all these marches is not Russian. The little corner on the Dniester, for instance, of which Chotin, I understand, is the chief town, is Roumanian in speech, population, and religion.

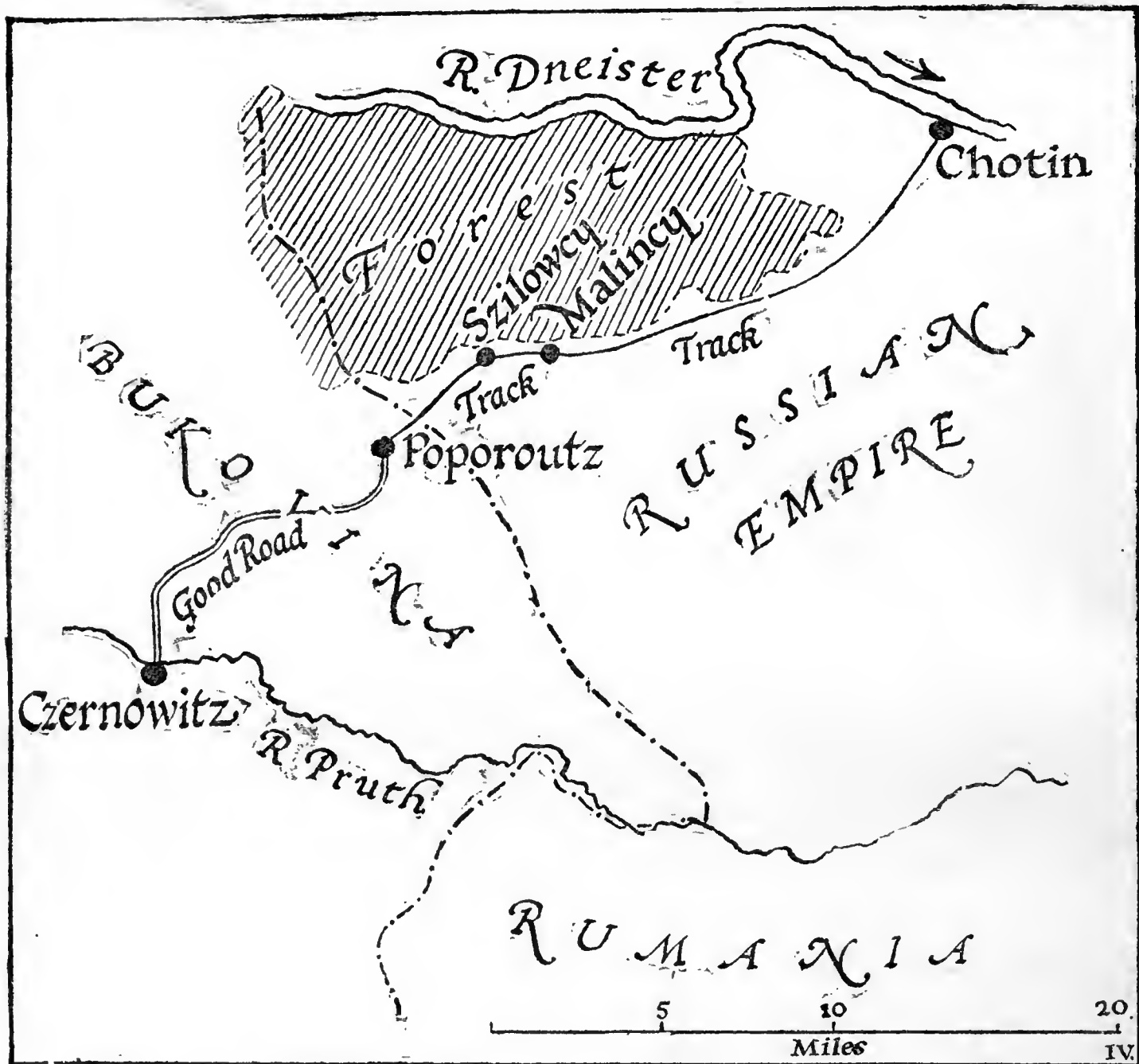
This corner is connected with the quite modern and artificial frontier of the district. Its elements may be seen in the accompanying sketch. The River Dniester runs in a very tortuous channel through hilly country, coming from Galicia and running through Podolia on its way to the Black Sea. For a few miles it forms the frontier between Austrian Galicia and the Russian Empire. The frontier then turns up northwards, following a small tributary called the Soruts. South of the Dniester the frontier runs along an arbitrary line north and south for rather more than thirty miles, until it strikes the Pruth, on which river Czernowitz stands. From this point the Pruth becomes a boundary between Roumania and Russia, as also for a few miles between Roumania and Austria. The Russian lines and the Austrian lines facing them run in this district much as the line of crosses in the accompanying sketch.

The raid followed, roughly, the line of the arrow in the sketch, and got about half-way to Chotin—or, say, one day's march into Russian territory. Its advance bodies, holding two villages, was then rounded up and the rest retired. The whole thing was on a very small scale, and is only interesting as an example of this tendency of a state of deadlock to break out into raid. It is just possible that a subsidiary object of the little effort was the impressing of local Roumanian opinion. But, if so, the effect was not worth any considerable expense of men.

The details of this affair can best be appreciated by a glance at sketch IV.

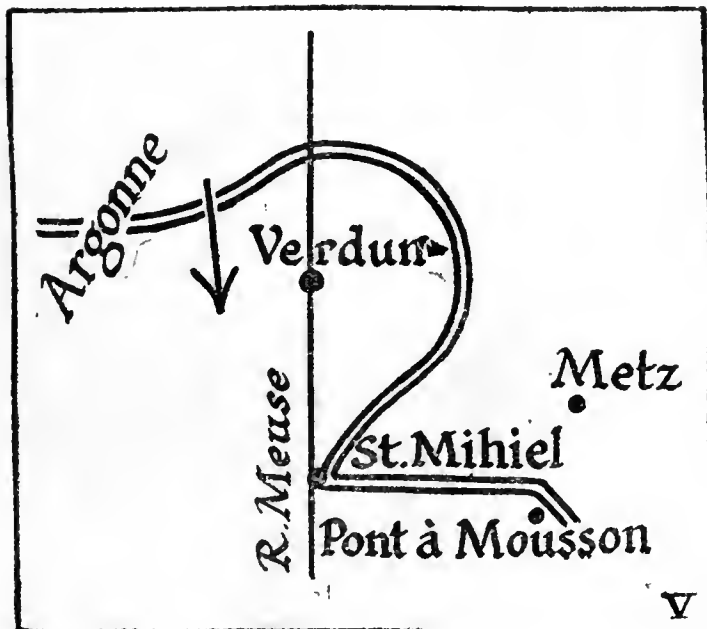
As is so frequent upon this frontier, the good roads belong to the Austrian side, and beyond them there is often nothing but a track of earth.

By such a good road the Austrian division appears to have marched up from Czernowitz to the village of Poporoutz, where apparently it halted after the first day's march. On the second day it would seem to have crossed the frontier and to have taken the track which leads along the edge of the forest to the market town of Chotin, on the Dniester, rather more than twenty miles away. This forest stands on the right bank of the Dniester, over an area of about fifty square miles, and is ravined by numerous brooks falling into the river. It stands somewhat high, and to the south of it is a plateau of open country dotted with numerous villages. To hide an advance in such country was impossible. The advanced bodies of the raid would seem on the second day to have been billeted in two villages on the edge of the forest, Szilowey and Maniey. Here they took contact with considerable bodies of Russian irregular cavalry, accompanied, of course, by a strong force of guns and many dismounted. The main column fell back, defended by a rearguard occupying the two villages, and the troops forming this rearguard appear to have suffered heavily. They consisted of Hungarian reservists, and lost about two thousand prisoners. It may be presumed that the whole of the body that escaped is by now back beyond the frontier.



THE WESTERN FRONT.

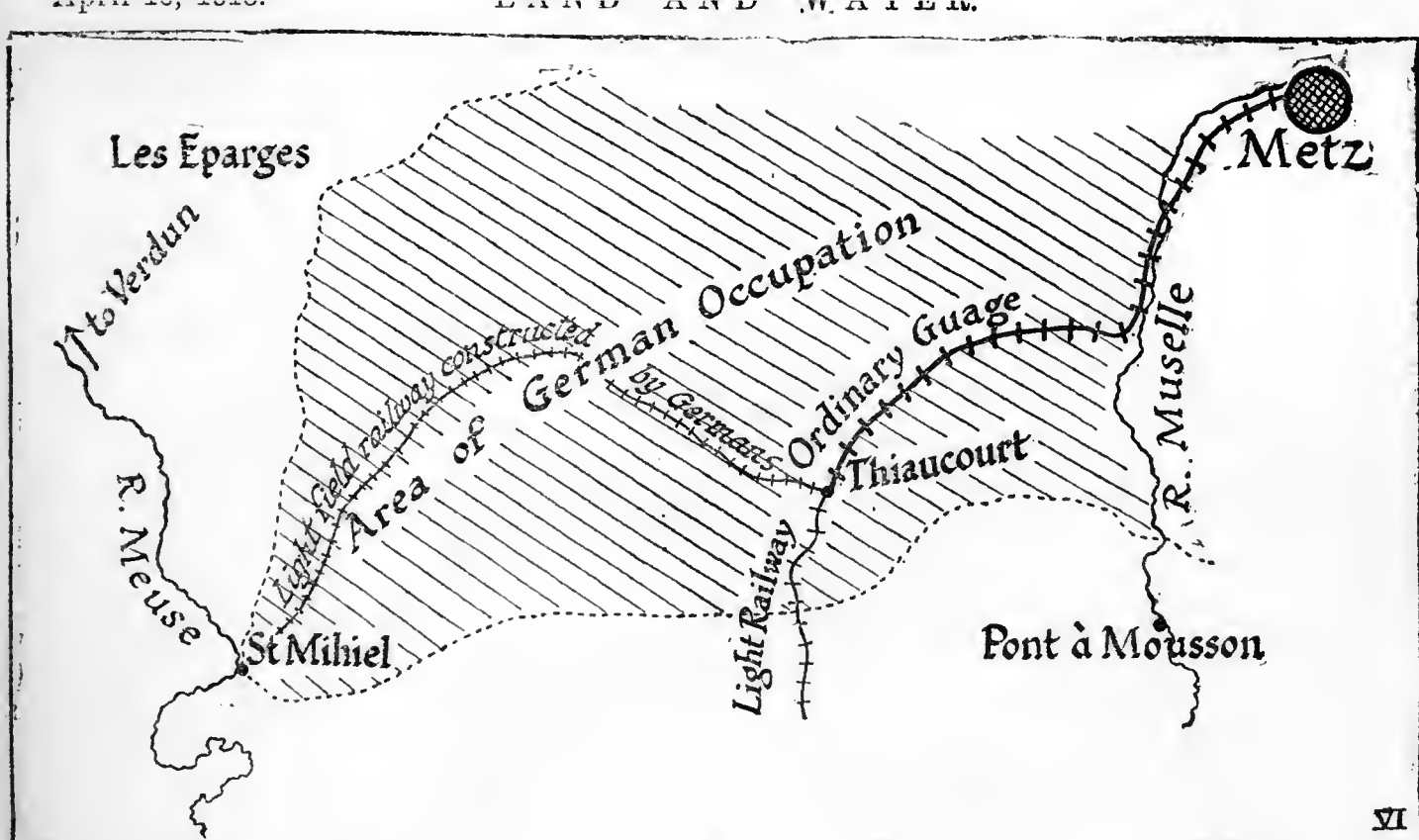
The only news of interest upon the Western front at the moment of writing (Tuesday evening) is the capture by the French of Regnieville, a suc-



cess which they achieved last Saturday, following upon their capture of Fey en Haye, two days before.

Slow as are the results of all this siege work, the particular advance in question may quite possibly prove of importance to the near future, and in order to understand why this should be so, one has but to grasp the elements in this elementary sketch.

We all know that the Germans have for six months occupied a curious wedge pushing up to the Meuse at the Bridge of St. Mihiel. The effort they made was a considerable one with large forces, and its object has long been clear. If ever they had the good luck to be able to take a vigorous offensive in the West again, it would greatly increase their power if they could invest the fortress of Verdun, and so make the whole French line fall back. In order to effect this, they advanced in September in great force up to the point of St. Mihiel, on the Meuse, and held it. Meanwhile, much further along their front (which is indicated on the accompanying diagram with a double line) they proposed, by attacking vigorously from the Argonne, which lies to the west of Verdun, to complete the ring. The wedge at St. Mihiel was a sort of buckle to which they desired to fit the strap by pushing down from the north-west. In this attempt they have been quite unsuccessful. They have, if anything, gone back in the Argonne. They lost Vauquois a fortnight ago, and their line through the woods is bent where two months ago it was straight, but



they still hold on to St. Mihiel in the hope that later forces released from other theatres of war may enable them at last to advance from the Argonne. They hold on thus to the advance post of St. Mihiel not without some peril. The position is awkward, threatened on either side, and dependent upon a line of supply from Metz, the first half of which is furnished with a railway, long established, to Thiaucourt, and the second half with a field railway the Germans themselves have constructed, taking it through the middle of the wedge, as far as possible from its two threatened edges.

In sketch VI. the shape of the wedge occupied will be seen roughly delineated. It runs from the Moselle to the Meuse, and its two edges are being bitten into continually by the slow French advance. On the north that advance has been considerable, and the French have taken Les Éperges, but on the south the action is more im-

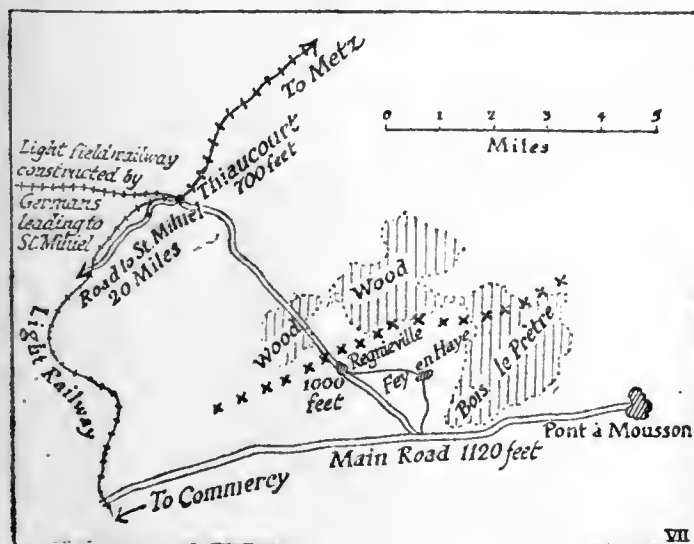
portant because the line at Thiaucourt comes close to this southern edge. that of the Argonne. They hold at the present moment very nearly the whole of this wood, lying on a front indicated by the line of crosses, and somewhat helped by the fact that the whole of this ground slopes away from the high road, which is about 1,100 feet above the sea, down to the valley in which the railway runs, 400 feet below. They carried, as we have seen, Fey en Haye, and last Saturday Regnieville, two tiny hamlets, the one with less than 200 inhabitants in time of peace, the other with a trifle over : both now, presumably, in ruins.

From Regnieville you cannot see down into the valley to Thiaucourt, the nearest point of the enemies' supply railway, because of a belt of wood which interrupts the view, but if the French advance can pass this wood and establish itself well on the slope beyond, the railway is done for. The big guns working behind the line will have it in range, and there are a mass of vulnerable points, culverts, and one narrow road bridge, if I am not mistaken, which would be within extreme range of guns posted between the high road and the woods. The whole thing is an advance upon Thiaucourt.

This detail of Regnieville which we have been reviewing, and all similar local successes, past and present, in the trench warfare—Perthes, Neuve Chapelle, the Hartmannsweilerkopf—have one common feature which must be grasped if we are to understand the present phase of the war. This common feature is the domination exercised over the new trench warfare by the heavy gun.

Many excellent critics have said that there is nothing new in this, because whenever siege work was concerned the heavy gun was obviously the master weapon. They are right so far, that the action of the heavy gun along the Western front in the present phase of this war differs only in degree, and not in kind, from the action of every big piece that has been turned against any earth-work during the last three hundred years. But the novelty of the present work consists in two points : the degree of exactitude necessary to the fire of the heavy guns, and the degree in the number of their projectiles.

As to the first point, exactitude, it is neces-



portant because the line at Thiaucourt comes close to this southern edge.

The French advance at Thiaucourt began from the main road which runs from Commercy to Pont à Mousson. Once they got hold of this they advanced into the wood called the Wood of the Priest (Bois du Prêtre), slowly making their way in desperate forest fighting comparable to

sary, from the closeness of the trenches and their size, and its *possibility* is partly due to the character of the modern weapon and the exact standardisation of propellant explosives, but much more to the supremacy in the air which the Allies have established. It is a matter of legitimate pride that the pioneer work here was mainly British work.

We are told by those who have every opportunity for forming a personal judgment that the mastery of the air acquired by the Allies is a mastery due to just those qualities of adventure and daring which many have too hastily imagined to have vanished from modern war. The enemy has flying machines not differing appreciably from those of the Allies. He can rise as high. He can fly as fast. Where he seems to have failed is, as everywhere in this war, on the not calculable side of human effort: the spiritual side that supplements the machine. Direct attack in the air, flying in difficult weather, flying low, he leaves mainly to his opponent, and therefore his opponent masters him.

The essence of the type of attack which the French have perfected in the last month or two is this:

On a chosen day the infantry in a particular section of trenches are bid to stand by for delivering an assault. As against that day a great concentration of heavy pieces and of munition for them is arranged. This concentration may be grasped by the enemy or missed. More usually, it is largely missed, because of his imperfect air-work. At any rate, once effected, on the morning chosen the heavy pieces begin to deliver a concentrated fire against the enemy's trenches. It lasts for a space of time varying with the nature of the work in hand. At Neuve Chapelle this tornado was kept up thirty-five minutes. On the Beauséjour front it seems to have been kept up usually for bursts of rather less than an hour. The other day, on the Hartsmannweilerkopf, it was kept up almost without intermission from ten in the morning until two in the afternoon.

This cannonade must, to be of value, obtain an exact accuracy of range. So close are the two opposing forces, so small is the objective presented by a trench, and so necessary to the result is the *local* effect of each projectile that, save with an exactitude in delivery unknown before the present campaign, the method would fail. It is the machine in the air, partly by its previous reconnaissance of the precise trace of the enemy's trenches, partly by its spotting of individual shots, that determines this accuracy, and, once determined, it shakes the enemy beyond the power of continued resistance.

An exact co-ordination must be observed between the work of the heavy guns and the work of the infantry that follows it. The infantry in the trenches cannot, of course, move until the artillery work is over; but the very moment it is over, while the enemy who has been subject to that cannonade is still stunned and distraught by it, and long before the survivors can remodel the trenches which have been knocked to pieces by the heavy fire, the infantry leap from their trenches and rush the intervening space and the first trenches of their opponents. They establish themselves hurriedly, but as thoroughly as they can, before the counter-offensive is launched.

To interfere with the value of that counter-

offensive, the heavy gun fulfils another task. It next creates a zone of fire *behind* the captured trenches, passage through which zone is sometimes impossible and always exceedingly costly.

It will be seen that this method constantly pursued does all that the war of attrition demands. It kills and wounds great numbers of the enemy; it leaves initiative entirely in the hands of the Allies; it causes considerable batches of prisoners to be passed continually from the enemy's lines into ours. It has but one drawback. It is spasmodic on account of the enormous amount of projectiles it consumes in each effort.

But it may be asked why so obvious an arrangement is mainly in the possession of the Allies, and why the enemy, since two can play at any game, does not attempt similar action against us.

Sometimes, of course, he does attempt it; as, for instance, in the attack on St. Eloi the other day, in front of Ypres. But he does not attempt it once to ten times that it is tried against him. And the reason that he thus finds himself perpetually receiving blows which he cannot adequately return is mainly due to his now fixed inferiority in the air and next to his husbanding of ammunition.

Here the second point, the superiority in munition of the Allies in the West, comes in. It is of the first importance, but, unfortunately, it is a matter on which, in the nature of things, we have very scanty evidence indeed. We do know, however, that, for reasons which will be suggested in a moment, the enemy is still chary in his use of big shell along the Western front.

In the first place, he is certainly hampered for nickel, and probably already somewhat hampered for copper.

In the second place, he probably feels more than do the Allies the burden of relining guns and of completing new pieces. The reason of this, paradoxical as it may seem, is that he was so much better prepared with heavy artillery than were the Allies at the beginning of the war. If you have everything ready and thought out for one set of things, you exclude by all that preparation another unexpected set of things. Just as a backward country suddenly developing itself will more easily get the latest machinery than an old and wealthier country, long developed, so a country which has prepared for the use of a particular weapon in a certain maximum quantity, and to be exercised over a maximum time, is likely to be at a loss when the allotted time is exceeded and the quantity proves insufficient, compared with rivals who take up the whole thing on a novel scale.

In the third place, he wants many of his heavy guns for the Eastern front. The only real advantage the Austro-Germans have over the Russians is their superiority in this weapon. Take it away from the enemy in the East and he is beaten.

In the fourth place, neutral markets for munitions are closed to the enemy; a handicap which makes him rage most furiously, for it offends his sense of justice.

And, in the fifth place, counting every man as he does in such an industrialised state, and keeping a bare minimum back to supply his armed forces from the factories, he is hampered somewhat for labour.

COTTON.

Explosive he has in any quantity he likes, both

propellent explosive and explosive for bursting charges. The latter he makes from the distillation of coal, which he has in abundance, and which he can nitrate at will. The former, thanks to the deliberate relaxation of the blockade, he now possesses in a very large amount. Indeed, the main question for those who are agitating in this matter to consider now is whether it is worth while to prevent his getting cotton, since he already has such a very great stock of it. He cannot use anything except cotton, and we have allowed him to accumulate about one million bales. We have forbidden wool to go into Germany, though wool comes from the Empire, and though wool only clothes his soldiers. We have allowed cotton to go in freely, quite as much since the Order in Council as before. The matter is gunpowder. The matter is controversial, and, therefore, I will not debate it here, but I believe my figures are correct. A million bales is, I believe, somewhat short of the material for 300,000,000 lbs. of explosive, and at the same time it is the support of large numbers of his industrial population.

Whether it is worth while or not to have provisioned him—and to continue to provision him—so handsomely with the one chief material factor in modern war, and the one which he could not possibly get without our aid, it is for those who know all the facts—and I do not pretend to know them—to determine.

A SIGNIFICANT WITNESS.

One must be very careful in following the evidence—especially the evidence for numbers—in these great campaigns, never to allow any element into one's calculation that is not what the French call "positive."

Nor should one put into the wrong categories the various activities of the enemy. One should not, for instance, mix up false news which is deliberately spread among the German populace with official news circulated by the Government for French, English, and Russian General Staffs to accept or reject.

I will not, therefore, exaggerate the importance of the following piece of German propaganda, but I do use with regard to it the word "significant" because it is a very clear example of something which I have insisted upon perpetually in these notes—to wit, that the various sections into which the enemy's efforts at influencing opinion is divided are fairly clear-cut. What I am about to quote throws a very clear light upon the way in which neutral countries are being coached by Germany.

It is a series of figures published in an organ of the Swedish Press as late as March 19, and purports to be (what it no doubt is) a summary furnished by a writer "who has been recently in Berlin." Its principal figures are as follows (to the nearest round figure in tens of thousands):—

<i>For RUSSIA:</i>	750,000	dead.
	770,000	prisoners.
	1½ million	wounded.
<i>For the FRENCH:</i>	460-70,000	dead.
	500,000	prisoners.
	720,000	wounded.
<i>For ENGLAND:</i>	120,000	dead.
	80,000	prisoners.
	180-90,000	wounded.

<i>For GERMANY:</i>	340,000	dead.
	130,000	prisoners.
	620,000	wounded.

Now, I need not tell my readers that these figures are fantastic. My point is rather to impress upon them the *quality* of the phantasy. It is this: The enemy is getting now into the habit of hitting blind. We have had plenty of necessary falsehood by way of suppression, and not a little falsehood by way of direct statement or implication on all sides in this great war.

But you will not find at all in the statements of any of the Allies, nor will you find in any of the statements issuing from Germany (until these last few weeks) the element of the monstrous.

When one reads, even in official French accounts, the news of prisoners who believe that the Germans are in Paris, or any startler of that kind, one hesitates to believe the story. But statistics such as the above—sent to supposedly friendly newspapers—give one pause.

The *British* prisoners in this silly circular are multiplied by *four*; the British dead by less than *ten*, but more than *six*; while the total wounded of all sorts are made out little more than the dead.

The *German* figures, *all added together*, come to *less* than the belated and imperfect official lists (published by the Allies) for *Prussia alone* a month ago, and give a proportion of *less than two wounded to one killed*.

The French prisoners are more than double the total numbers which the Germans have been able to make up by counting every conceivable civilian item into their own official numbers (as published for us—who can judge, not for neutrals). The total of French casualties, adding the sick, amount to more than the whole immediate front French fighting line.

It is clear that these figures were not even exaggerations of existing lists. They were made up out of the author's head and had no relation to reality. But they were certainly sent to the Press of a neutral country believed to be friendly.

The lesson to be learnt from an incident of this sort seems to me to be three-fold.

In the first place, and most important, it is another piece of evidence showing the working of the enemy's mind; wherein there is that mixture, not uncommonly found in individuals, of patience and bad judgment; or, let me say, of accuracy and responsibility, where calculable things are concerned, coupled with great incapacity where things incalculable (like the mind of the dupe) are concerned.

In the second place, it is a piece of evidence showing us that a North German or Prussian statement is always quite simple; and that when we have got to the motive of it we can put a label on it without fear of error. Such an enemy statement is always either rigidly accurate, or false, but quite credible, or false and fantastic, as the case may be; but the three categories do not run into one another. These bits of enemy news are simply accurate or simply false, and if false either credible or quite ridiculous.

It would be interesting, by the way, to collect and criticise a whole conspectus of this kind of thing. Such informations must be numerous in the Press of neutral countries, and particularly in the Press of countries still thought by the German General Staff to be favourable to the German cause.

THE WAR BY WATER.

THE SUBMARINE POSITION & THE "BLOCKADE."

By FRED T. JANE.

NOTE.—This Article has been submitted to the Press Bureau, which does not object to the publication as censored, and takes no responsibility for the correctness of the statements.

THE most important incident during the last week is not one that at first sight would appear to have any particular significance outside the operation itself. It is some long time since we first sent aeroplanes to drop bombs on submarines building or being put together at Zeebrugge, and the work came into the category of "doing damage" rather than aught else.

Of late, however, aerial attack on submarines has been resumed with considerable assiduity, and there is every reason to believe that what appears to the public merely as "another daring air raid" is really part of a scheme of high general strategy. Indeed, it is not impossible that we are witnessing the dawn of an entirely new era in naval warfare.

Before the war there was a somewhat general impression that aircraft had to a great extent neutralised submarines. Theories varied in detail; but in all the main idea was that submarines would easily be detected from the sky and then as easily destroyed by bomb-dropping unless they hastily buried themselves many fathoms down or were protected by aerial consorts. We also heard a great deal of the ideal combination of aircraft and submarines, but to all intents and purposes we have seen nothing of the sort.

On the other hand, two factors have by now made themselves abundantly clear. Of these the first is that, *given the command of the sea*, the small craft of the superior Power can do a great deal in the way of eliminating submarines—how much we shall have to wait until the end of the war to learn. However, the mere fact suffices.

The second factor is that, *given the command of the air*, submarines building or lying at their bases can be attacked and destroyed. This last, however, may be merely a temporary phase, at any rate, so far as building is concerned, because bombproof sheds offer an obvious remedy unless the air power available be sufficient to prevent the construction of such safeties, or they can be destroyed by gun fire from big ships in bombardments like that of Zeebrugge some months ago.

Neither factor seems to have presented itself to the German mind, any more than a third factor, which I shall discuss later—that of *personnel*.

Details of new German submarine construction are, so far as the public is concerned, necessarily hard to come by; they are naturally only approximately to be arrived at, and then only by piecing together odd scraps of information derived from neutrals. We, of course, know that on the outbreak of war Germany had from eight to twelve submarines in various stages of construction. These can hardly have sufficed to replace losses which may run to anything between fifteen and twenty. Some of the reported ramming by merchant ships may be duplications of the same story, or the rammed submarine may have merely been injured somewhat and not sunk. None the less, considerable losses must have been sustained, and, one way and another, the available force of German submarines at the present moment must be, relatively speaking, inconsiderable, especially when we remember that they have the Baltic to attend to as well as our waters. With things as they were German submarines would have gradually died out, just as the commerce raiding cruisers did.

But—judging from the reports of neutrals—there is every reason to believe that on the outbreak of war Germany suddenly laid down from fifty to sixty submarines. This has been so often reported, and reported from so many different sources, that it may safely be assumed as a fact. In addition, the improvising of submarine building yards on the Belgian coast suggests that all the private yards of Germany are also building submarines.

Now, the average time for construction of a submarine under normal conditions is anything from a year upwards. But in circumstances of pressure nine months is a quite possible and reasonable period, and the war has now lasted nearly nine months. Therefore, we may expect a very early and large numerical increase in German submarines.

Now, this means that on the outbreak of war Germany suddenly altered her naval policy, her usual programme having been six boats a year. Why she made this sudden

change must necessarily be a matter of surmise. We can if we will attribute it to a pre-war belief that the British Empire would not be co-operating with France and Russia. Or we can attribute it to a sudden realisation of the impotence of a few big ships against many—a sudden falling-away from German eyes of the scales of convention. Yet again the ease with which in rapid succession our *Pathfinder* and the three *Cressies* were submarined may have had much to do with the sudden conviction of Germany that her future, instead of lying on the water, lay under the water.

Possibly all three causes operated. In any case, however, the net result is of the nature of a new era, a vast increase (for as soon as one boat is launched another appears to be laid down) in the number of submarines and a decision to regard the submarine as the principal warship for modern requirements.

Now, where numbers are concerned this is perfectly feasible; but where *personnel* is concerned the matter assumes a somewhat different aspect. So far as men go, submarine crews can probably be trained inside a month. Their duties are mainly mechanical.

With submarine officers, however, the state of affairs is totally different. On the officers everything depends, and a semi-trained submarine officer is rather worse than useless. It takes a good two years or the better part of that time to train an officer to command a submarine efficiently. On his nerve, skill, endurance, and judgment everything depends to a degree of which the general public (and, for that matter, a fair number of senior officers) have no conception whatever.

When war broke out Germany had available somewhere about one hundred trained submarine officers at the outside. Of these, one way and another, she must have lost anything from one-third to a half, and none of those officers whom she may have trained in the interim can yet be suitable for effective command.

So far as war efficiency is concerned, we may take it, therefore, that the numerical increase and the effective increase will not be at all one and the same thing. It will necessarily mean the scrapping of all the older boats, or else relegating them to training service. It will also be necessary to promote to the command of large boats officers from small boats and officers who have been second in command of boats, and who—to a certain extent—are, therefore, still "under training."

Consequently, if fifty new submarines be added to the German Fleet in the course of the next few weeks, it will not mean fifty boats added to the effective force of those already existing. It will, however, mean the substitution of newer and greatly improved boats for older ones, and here our aerial raids to check new construction perform a special function. Germany, having failed in her challenge to us on the sea, is now about to fight for the under-sea mastery.

The recent air raids on submarine bases indicate that our Admiralty is fully alive to the situation and determined to leave no stone unturned in maintaining our submarine superiority. Speculations as to all the measures being taken are undesirable; but no harm is done by drawing attention to the fact that when this war started we had two or three submarines to every one possessed by Germany and a much more considerable building programme in hand. This naturally implies a far larger number of trained and efficient officers—that is to say, humanly speaking, we possess as heavy a margin for the new warfare as we did for the old.

It is true that in the new warfare in which Germany has elected to seek naval salvation there is the problem of how submarines are to fight each other. Unless both sides are determined on a surface fight nothing is to be done save by surprises, which of necessity are likely to be few and far between. But, as I pointed out last week, the superior Power has the advantage of being able to adopt the offensive, and the net result of Germany's great submarine move will probably be that we learn to attack her in ways that else we might not have deemed possible.

In the wanton slaughter of non-combatants in merchant ships von Tirpitz is probably training our Navy to adapt itself to the new era in naval warfare; indeed, the real net

result of the submarine "blockade" may be the hastening of that era. If the "blockade" has taught us the limitations of the submarine, it has also served to give us a clearer idea than heretofore of its potentialities.

It is early days yet to prophesy that this war will witness the disappearance of the *Dreadnought* as a naval unit. Such a state of affairs could perhaps only be brought about by a succession of incidents in which the *Dreadnought* was invariably annihilated by the submarine—and it is a far cry to adopt that as a probability.

None the less—for all that, little to justify such an hypothesis appears to have occurred—there is reason to believe that the next two or three months or so are going to witness profound modifications of many of the previously accepted ideas of naval warfare. If not fully up to the prophecy of Admiral Sir Percy Scott a year or so ago, all the present indications are that the capital ship will presently be the submarine, all other vessels gradually becoming subsidiary and auxiliary to it.

THE DARDANELLES.

Up to the time of writing (Monday night) there have been no further developments in the Dardanelles. Occasional bad weather interferes with the operations, and mine sweeping is considerably hampered by the perhaps somewhat unexpected activity which the Turks (or, more probably, their German advisers) are displaying in the matter of repairing forts and making use of mobile artillery.

At and about the Narrows the channel is so restricted that every sort and kind of weapon can be utilised to annoy the mine sweepers, while concealment of guns from aerial observation has now become such a fine art that it is unfair to expect too much assistance from the sky. Pending the clearance of the shores by a land force, it is difficult to see how progress afloat can be aught but very slow and tedious, especially since every spell of bad weather gives opportunity to the enemy to make good his damages.

THE BOSPHORUS AND BLACK SEA.

The Russian Black Sea Fleet is now reported to be conducting operations against the Bosphorus defences, but so far as can be gathered nothing of a serious nature has yet been attempted. Very probably the Russians are badly hampered by lack of equipment and supplies for any co-operating land force, while they are undoubtedly further hampered by the circumstance that they can ill afford to lose any of their ships, as they have no reserve to draw on such as we and the French have.

The difficulties of any naval action against the Bosphorus were dealt with in these Notes a fortnight ago. One way and another, therefore, it is likely enough that Russian progress will be as slow or slower than our own.

The small Turkish cruiser *Medjidieh* is semi-officially reported to have struck and been sunk by a mine in the Black Sea, where she was conducting some marauding operations devoid of all military significance. Her loss can have no material effect on the campaign, as her fighting value was small and she was getting old.

ANSWERS TO CORRESPONDENTS.

F. A. C. M. (Bath).—(1) All except the very latest German submarines have a peculiarly raised bow which cannot be mistaken. (2) The captain of a merchant ship would certainly be unable to tell the nationality of a submerged submarine from its periscope. On the other hand, no British submarine would approach a merchant ship in such a condition, so "sunk by mistake" that way would be an improbable event. (3) In the national interest the Admiralty may at any time see fit to conceal a loss, but you may take it that they would immediately inform privately all the relatives of the lost.

POBBLES.—The Navy has quicker ways of disposing of hostile mine fields than by the scheme which you suggest.

W. A. W. (Clifton).—You are by no means alone in criticising the responsible naval authorities because the *Ocean* and other ships were sunk by floating mines. But, as I pointed out at the time, no information has yet been forthcoming as to the conditions which obtained, and in the absence of any such information both comment and criticism must necessarily be unfair and futile. Trust the British Navy.

R. N. (Belfast).—A submarine can lie at the bottom of the sea provided the water be not too deep. It could do so down to 150 feet or so. If, of course, it tried to do the same thing in the deepest part of the Atlantic the pressure would crumple it up.

J. H. (Scarborough).—(1) I am sorry, but I do not know the answer myself. Possibly some of the big projectile-makers, such as Hadfield or Forth, would give you the information you require. (2) The 11in. and 12in. German shells have two copper bands; I do not remember what the 8.2 has. (3) The marks on the nose of the shell presented to you by the German warships are no clue to the dimensions of the shell. (4) Nothing seems definitely certain as to which ships bombarded Scarborough, but the ships out are generally believed to have been *Moltke*, *Seydlitz*, *Derflinger*, *Von der Tann*, *Blücher*, and some of the small fast cruisers like the *Rostock*. One, at least, will never be seen again.

M. W. C. (Bristol).—(1) At the present moment, to all intents and purposes German cruisers are swept off the seas. The fate of one or two is somewhat uncertain, but they are certainly quite harmless. (2) The *Gazelle* was got into harbour badly damaged. (3) The Admiralty very wisely object to comments on questions having to do with the particular condition of any particular ship. (4) The *Emden's* landing party apparently got away while the *Sydney* was otherwise engaged. (5) Portugal has no Navy suitable for modern naval warfare. She has been several times reported as being technically at war with Germany, but that appears to be the end of the matter.

E. P. S. (Cheltenham).—When a ship is interned she is usually more or less taken possession of by the port authorities, and it is legally correct to disarm her.

W. C. S. (West Hampstead).—Devices for catching submarines under water are as common as blackberries. They are unfortunately nearly always based on a failure to appreciate the capabilities of modern submarines.

O. W. J. (Liverpool).—A device such as you suggest is feasible, but even at the present time the submarine is "nobody's friend." It might deceive merchant ships, but would not deceive naval officers.

A. B. P. (Winchester).—I do not think that there is any truth in the rumour to which you refer, but in any case it is inadvisable to allude to it in print. For the successful conduct of this war it is absolutely necessary for the public to trust the responsible authorities and to be content to remain ignorant about matters which are naturally of the utmost interest to everybody.

R. C. B. (London, S.W.).—If you study the title of that photograph of the Fleet outside the Dardanelles, you will see that no date is specified. It was probably taken quite early in the war, and no connection with the more recent operations.

E. S. R. (St. Andrews).—The scheme you suggest is quite feasible, but the British Navy is hardly likely to be caught napping that way.

W. S. C. (Glenarm).—The scheme you suggest was employed in the American Civil War and has been in use ever since.

J. S. D. (Highgate).—(1) American newspapers are always discovering "young inventors" who have hit on some idea to revolutionise war. The writer of the paragraph which you enclosed is obviously entirely ignorant of what can be done with modern torpedoes. Any of the latest Whiteheads will easily travel five miles. (2) Your periscope suggestion was, I happen to know, submitted to the Admiralty by an optician very early in the war. It is, of course, based on a device commonly used in the music-halls. The bulk of the periscopes which are seen by people are hallucinations—even men daily trained to look for them find it very hard to see them. (3) I understand that this idea has been experimented with, but that it did not prove practical. (4) I think the same answer applies.

HOPEFUL (York).—There is little limit to the auxiliary services for which submarines can be employed, but success always depends entirely on the individuality and ability of the officers in charge.

MR. HILAIRE BELLOC'S WAR LECTURES.

Birmingham.....	Town Hall.....	Tuesday.....	13 April, 3.30 & 8.30
Leamington.....	Town Hall.....	Wednesday.....	14 April, 3 p.m.
Nottingham.....	Albert Hall.....	Wednesday.....	14 April, 8 p.m.
London.....	Queen's Hall.....	Wednesday.....	5 May, 8.30 p.m.

MR. FRED T. JANE ON THE NAVAL WAR.

Leeds.....	Albert Hall.....	Thursday.....	15 April, 8 p.m.
Sheffield.....	Victoria Hall.....	Friday.....	16 April, 8 p.m.
Harrogate.....	Kursaal.....	Saturday.....	17 April, 3.30 p.m.

MR. CRAWFORD PRICE ON "SERBIA."

Blackpool.....	Winter Gardens.....	Monday.....	12 April, 8 p.m.
Scarborough.....	Opera House.....	Tuesday.....	13 April, 3 p.m.
York.....	Opera House.....	Wednesday.....	14 April, 3 p.m.
Manchester.....	Free Trade Hall.....	Thursday.....	15 April, 8 p.m.
Southport.....	Cambridge Hall.....	Friday.....	16 April, 8 p.m.

PROFESSOR LEWES ON "MODERN EXPLOSIVES."

Terquay.....	Pavilion.....	Friday.....	9 April, 3 p.m.
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INFLUENCE OF AIR POWER.—III. CO-OPERATION OF AIRCRAFT WITH ARTILLERY.

By L. BLIN DESBLEDS.

IN a previous article the writer endeavoured to show that the advent of aircraft relieves the cavalry of certain tasks for which it is not really suited, thereby increasing the value of that arm, provided always that the latter is capable of taking full advantage of its air service. The ascendancy, for instance, which our air service seems now to possess over that of the enemy is due not only to the superiority of the service itself, but also to a very careful and intimate co-operation that, for efficiency, must exist between air squadrons and the forces to which they are attached. Destroy that close co-operation and you destroy, at the same time, aerial efficiency as at present known.

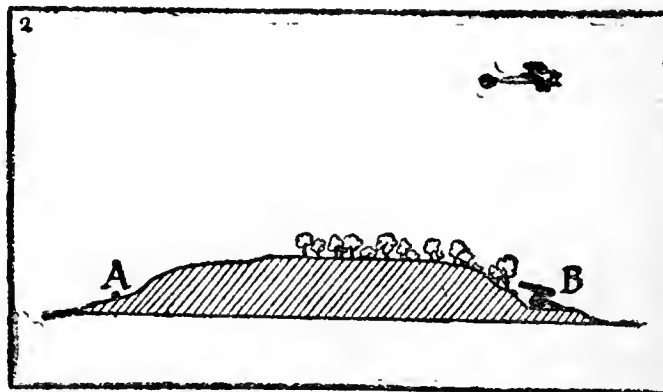
It is not only as a means of reconnaissance, supplementing the cavalry, that aircraft have already exercised an indirect influence in the present war. The aeroplane has also rendered invaluable service to the artillery.

The employment of smokeless powder by the belligerents has rendered the location of targets for artillery a very difficult matter indeed, and has resulted in a great waste of ammunition and a great amount of useless wear and tear of big guns. This is especially the case where the equipment of the gun enables fire to be delivered from positions hidden to the opposing artillery.

Ascendancy in the air now enables a commander to use his aircraft to co-operate with, and to assist, his artillery. The assistance which an efficient air service can render to the artillery can be classified under four heads:—

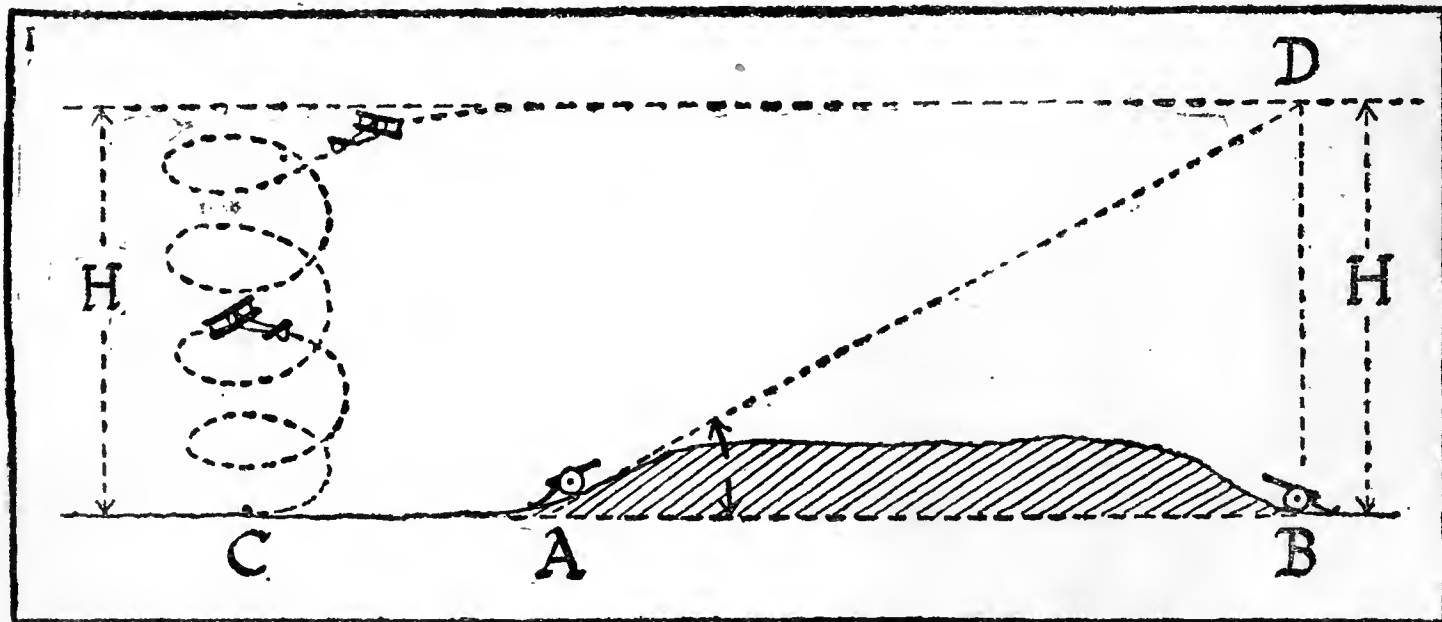
- (i.) Discovery of hostile batteries, their strength and arrangement.
- (ii.) Indication of concealed targets.
- (iii.) Observation of fire and assistance in the process of ranging.
- (iv.) Information concerning the effect of the fire.

Thus, suppose that, as indicated in Diagram II., an artillery commander at *A* wishes to determine exactly the distance *A B* of a hostile battery *B* hidden from him, and that he decides to have recourse to the services of one of his airmen



for that purpose, he would indicate to his aerial observer the direction of *B*, and would decide with him at what altitude he would fly over the enemy's battery. The airman would then go to some suitable place, *C*, behind *A*, and from there would rise to the prearranged altitude, *H*. In passing, it is interesting to note that the aeroplane reaches its altitude by moving in a spiral until the required height, *H*, has been reached. It then flies out, keeping at that height, towards *B*. At *D* it is immediately over *B*, and it has to make this fact known to the artillery officer by means of a system of signals which the writer cannot indicate in an article meant for publication during the war.

If the artillery officer at *A* knows the exact moment when



In Diagram I. an illustration is given of a position where an enemy's battery *B* is concealed from the artillery at *A*. The battery *B* may be so concealed by trees and bushes that the ordinary methods of reconnaissance cannot easily locate it. An aeroplane, flying from *A* over *B*, may determine the position of the battery, unless the battery itself is rendered invisible from above. In most cases, however, there will be some sign of activity near *B* which will attract the aerial observer's attention and which will enable him to make a detailed observation of *B*.

In assisting an artillery commander the airman is most often given the general direction of the enemy's battery relatively to his own, and his task consists in locating the target along that direction.

In such a case the aeroplane rises to a prearranged height behind his artillery commander's battery in order to run less danger from hostile fire. When the airman has reached the required altitude he flies out towards the battery, in the indicated direction, to locate exactly the target. The location of the battery enables the artillery commander to determine the distance of the target with a great degree of accuracy.

the aircraft is at *D*, a point vertically above *B*, then all he has to measure in order to determine the distance *A B* is the angle *D A B*. He has then sufficient data either to obtain the range *A B* by calculation or by means of a range-finder.

It is impossible to over-estimate the value of exact and quick range finding. Its importance is threefold:

- (a) It is conducive to a quicker destruction of the enemy's battery.
- (b) It reduces the waste of ammunition and the wear and tear of the guns.
- (c) It reduces the time to which batteries may be exposed to the enemy's fire.

In other words, an aerial ascendancy which allows the co-operation of aircraft with artillery, whenever the situation demands it, is of such great moment that no country possessing such an asset should run the risk of compromising its effectiveness.

It must not, however, be forgotten that the influence of air power resulting from the co-operation of aircraft with artillery is just as indirect as that arising from its use with the cavalry or any other arm. An artillery commander can

take full advantage of the assistance of his air service only if he is not outranged by the artillery of the enemy, and if he has an adequate supply of guns and ammunition. It would be of no avail to him to know the exact range of the enemy's battery if the enemy did not allow him to place his guns sufficiently near enough to damage their battery, or if he had not sufficient ammunition for that purpose. It is thus clear that it is but an indirect influence which air power can exert when it is obtained as a result of the co-operation of air units with land and sea forces. An air fleet can only exert a direct influence if it be employed as an entirely independent force.

The general conclusion, therefore, to be drawn from the facts which the writer has already explained in this, and the previous articles, on the Influence of Air Power is that such an influence can be exercised in two ways:—

- (a) *Indirectly*, by the co-operation of aircraft with cavalry, artillery, &c.
- (b) *Directly*, by employing aircraft as an independent force.

The first demands that air fleets, or air squadrons, should be placed under various cavalry and artillery commanders, whilst the second makes it clear that they should form a force capable of acting either independently or, when necessary, in

direct co-operation with the Commander-in-Chief. The inadvisability of employing an air fleet, at one time independently, at another under the orders of cavalry or of artillery commanders, is obvious. Such a method would not lead to the close and intimate co-ordination necessary to an air fleet acting in co-operation with cavalry or artillery, and would not, on the other hand, leave the aerial force sufficiently free to act on its own initiative and at its own time. And yet to benefit fully from influence of air power it is necessary to be able to use its *direct*, as well as its *indirect* advantages. With air fleets, as we now have them, it is necessary to compromise their direct, in order to profit by their indirect influence, and *vice versa*. The dilemma in which a Commander-in-Chief is at present placed as regards the employment of the aerial force at his disposal is the following: Shall he employ his air fleet to exert *direct* influence, in which case he would have to forego the advantages accruing from the co-operation of his aircraft with his other arms, or shall he employ his aerial force to exert the *indirect* influence with which we are now familiar, in which case he would have to renounce the possible effect of the direct influence of air power? This dilemma the writer proposes to deal with in his next article.

NAPOLEON'S PASSAGE of the DANUBE in 1809.

By COLONEL F. N. MAUDE, C.B., late R.E.

TO show how much easier the passage of a great river has become, thanks to the improvement which has taken place in modern armament, there is given here a brief account of the forcing of the Danube by Napoleon below Vienna.

It was in face of the whole Austrian Army, some 240,000, in 1809, and there are many points of similarity between it and the passage of the Rhine which we shall undertake this year; therefore Napoleon's operation is particularly interesting at the present moment.

In March, 1809, the Emperor had conjured out of the earth, so it seemed to his enemies, one of the greatest armies he had ever led, consisting of about 200,000 in the first line, followed by many reinforcements. Its numbers came as a complete strategic surprise to the Austrians; but, like another army now arrayed against us, its magnitude had been attained by the sacrifice of quality, and it could no longer attack on the battlefield except in heavy massed formations, so curiously does history repeat itself.

Essentially by weight of numbers skilfully concentrated at the decisive points, Napoleon had driven the Austrians before him right across Bavaria and through the mountainous barrier which lies between the Bavarian frontier and Vienna. He forced them to evacuate their capital and to transfer all their available troops to the left bank of the Danube, which runs north of the City of Vienna about three miles away.

The river here is as wide as the Thames at Gravesend, and runs with almost equal speed—i.e., four miles an hour in flood, and the floods were endless that year.

Over that width of water the artillery and musketry fire of the time was of no avail, and as the Austrian pickets were alert on the opposite bank, which they held for thirty miles above the city and twenty miles below it (quite a narrow front even then for a quarter of a million to defend), the outlook for the French, the prospect of their crossing the Danube, was far from inspiring. But some eight miles below Vienna was an island—that of Lobau, about 1,000 yards long, 300 wide, and separated from the Austrian shore by fifty yards of water, its borders densely clothed by willows and reeds.

The Emperor determined to surprise the passage of the river at this point. Collecting all the vessels and timber necessary for bridging in the little tributary which, flowing through Vienna, enters the Danube just above the Lobau, under cover of night parties of light infantry in boats captured the island, drove out the Austrian pickets, and the building of the bridge at once was begun, the while a fleet of boats ferried more troops to the island. The short bridges between Lobau and the left bank gave very little trouble to the French, and at daylight Napoleon attacked the villages of Aspern and Esslingen with the first troops to arrive on the ground, while ceaseless streams of reinforcements poured over the bridges.

At midday, however, a big flood poured down the river

carrying with it quantities of timber from the hills, breaking the main bridge. This was repaired again, and again destroyed, this time very seriously. The Austrians during this time, fighting with desperation, had repulsed all the French efforts, and, driven back, crowds of wounded and beaten troops came streaming into the island.

This was, perhaps, the most critical moment ever faced by Napoleon. His marshals, seeing what they believed to be a débâcle, urged instant retreat out of Lobau, using all available boats as ferries.

This the Emperor absolutely declined to consider. He realised, as perhaps his marshals did not, that at the first sign of withdrawal on his part all South Germany would rise against him, and the retreat once begun would never cease until the French had reached the Rhine.

So he remained, and fortunately the next day the weather moderated. Then he ordered the most colossal preparations for forcing the passage of the narrow arm of the Danube, deploying his troops in face of a victorious army on the opposite side, and military history holds no like record.

The arsenals and storehouses in Vienna supplied the Emperor with ample material, and after six weeks' labour the whole front of Lobau facing the enemy was converted into a huge battery of siege guns some 200 in number. These could sweep a zone inland 600 yards broad with such torrents of grape and case shot that no Austrians could survive within it; neither could they entrench, for the subsoil water lay too near the surface.

Finally, two great bridges were completed, and a picket boat service was organised to deal with the fireships and rafts of timber which were sent by the Austrians to drift down the current against the bridges.

Meanwhile they (the Austrians) had drawn as near to the river as the French guns would allow, and lay literally in formation for immediate action confronting the French.

In spite of this, under cover of night and later of the morning mists, the Emperor succeeded in sending over the Danube a first contingent of nearly 100,000 men, and with them achieved what was practically a surprise. The 100,000 were followed before nightfall by as many more, and for forty-eight hours one of the greatest battles in history raged, the result most uncertain to either side, until at length the Austrians, satisfied with the punishment they had inflicted and knowing that great reinforcements must reach them before long, gave up the field to the French, and retired to a fresh position, while the Imperial troops were too crippled to pursue. An armistice followed, and finally conditions of peace were arranged, with which we have nothing to do.

What is of interest is for us to note how immeasurably simpler the case would have been for Napoleon had the present-day appliances, both civil and military, been available on both sides in his time.

He did not capture and then hold on to the island of Lobau because he liked doing so, but because in no other way could he create an artillery superiority sufficient to sweep out a space large enough for the deployment of his army. The process of fortifying the island occupied weeks, during the whole of which period his enemy was receiving reinforcements and organising new ones, and his attention was then concentrated on the one and only point from whence the enemy could come.

During all these weeks rumours of the repulse suffered by the French at Aspern and Esslingen were spreading through the country and encouraging the inhabitants to raid the French communications, and incidents revealing the intense ill-will of the people, and not to be concealed from the troops, could not but depress their spirits when they proved to be of daily occurrence.

To-day the howitzers and light siege gun train accompanying every army, together with the field batteries, once they had established a relative superiority over the enemy, as those of the Allies have done in France, could have created and maintained an even more intolerable zone of destruction

from 3,000 yards range as Napoleon's siege guns could accomplish at 500; and instead of 200 guns, a modern army would probably dispose of nearly 2,000 in a case of similar importance.

The nights would have been just as dark and the current just as swift, but the means of overcoming these difficulties are now so incomparably more powerful that they would not present to us the same problem that Napoleon had to solve; while working under cover of searchlights the degree of darkness no longer matters, for, turning their beams full on the enemy, you can follow up in the shadows outside them without the chance of being seen, while you can when detected put out of action any searchlights of the enemy.

The whole question returns to the old one I quoted last week: "What man has done, man can do." And if in 1809 the French forced the passage of the Danube with the troops and materials then at their disposal, and against a strategical numerical superiority, they—or we—to whoever the task may be given, can force the Rhine with far greater ease in view of the greatly better means we now control, in all of which the relative superiority now belongs to us.

A DIARY OF THE WAR.

SYNOPSIS.

AUGUST 3RD.—Sir Edward Grey stated British policy and revealed Germany's amazing offer, in the event of our neglecting our obligations to France. Mobilisation of the Army. Ultimatum to Germany. German and French Ambassadors left Paris and Berlin.

AUGUST 4TH.—Germany rejected England's ultimatum. English Government took over control of railways. War declared between England and Germany.

AUGUST 5TH.—Lord Kitchener appointed Secretary of State for War. H.M.S. *Amphion* struck a mine and foundered.

AUGUST 6TH.—House of Commons, in five minutes, passed a vote of credit for £100,000,000, and sanctioned an increase of the Army by 500,000 men. State control of food prices.

AUGUST 8TH.—Lord Kitchener issued a circular asking for 100,000 men.

AUGUST 9TH.—The enemy's submarine, *U15* was sunk by H.M.S. *Birmingham*.

AUGUST 10TH.—France declared war on Austria-Hungary. Germans advanced on Namur. The new Press Bureau established by the Government for the issue of official war news.

AUGUST 11TH.—England declared war against Austria.

AUGUST 15TH.—The Tsar addressed a Proclamation to the Polish populations of Russia, Germany, and Austria, promising to restore to Poland complete autonomy and guarantees for religious liberty and the use of the Polish language.

AUGUST 16TH.—Japanese ultimatum to Germany demanding the withdrawal of her vessels of war from the Far East.

AUGUST 17TH.—The British Expeditionary Force safely landed in France.

The Belgian Government transferred from Brussels to Antwerp.

AUGUST 18TH.—General Sir H. Smith-Dorrien appointed to command of an Army Corps of the British Expeditionary Force, in succession to the late General Grierston.

AUGUST 21ST.—The German forces entered Brussels.

AUGUST 23RD.—Japan declared war on Germany.

AUGUST 24TH.—Fall of Namur.

AUGUST 27TH.—The German armed merchantman *Kaiser Wilhelm der Grosse* was sunk by H.M.S. *Highflyer* on the West Africa Coast.

AUGUST 28TH.—A concerted operation was attempted against the Germans in the Heligoland Bight.

The First Light Cruiser Squadron sank the *Mainz*. The First Battle Cruiser Squadron sank one cruiser, *Köln* class, and another cruiser disappeared in the mist, heavily on fire, and in a sinking condition.

Two German destroyers were sunk and many damaged.

SEPTEMBER 3RD.—The French Government moved to Bordeaux.

SEPTEMBER 4TH.—The Russian Army under General Ruzsky captured Lemberg.

SEPTEMBER 5TH.—The formal alliance of England, France, and Russia was signed in London by the representatives of the three Governments concerned, binding each nation to conclude peace, or discuss terms of peace, only in conjunction with its Allies. End of retreat from Mons to Marne.

SEPTEMBER 6TH.—The scout-cruiser *Pathfinder* foundered after running upon a mine.

SEPTEMBER 7TH.—Fall of Maubeuge.

SEPTEMBER 9TH.—The English Army crossed the Marne, and the enemy retired about twenty-five miles.

SEPTEMBER 13TH.—On the left wing the enemy continued his retreating movement. The Belgian Army pushed forward a vigorous offensive to the south of Liège.

SEPTEMBER 14TH.—All day the enemy stubbornly disputed the passage of the Aisne by our troops, but nearly all the crossings were secured by sunset.

SEPTEMBER 15TH.—The Allied troops occupied Rheims.

SEPTEMBER 16TH.—Submarine *E9*, Lieutenant-Commander Max Kennedy Horton, torpedoed the German cruiser *Ucla* six miles south of Heligoland.

SEPTEMBER 19TH.—The British auxiliary cruiser *Carmania*, Captain Noel Grant, Royal Navy, sank the *Cap Trafalgar* off the east coast of South America.

SEPTEMBER 22ND.—H.M. ships *Aboukir*, *Hogue*, and *Cressy* were sunk by submarines in the North Sea.

SEPTEMBER 23RD.—British aeroplanes of the Naval wing delivered an attack on the Zeppelin sheds at Düsseldorf.

OCTOBER 1ST.—The arrival of the Indian Expeditionary Force at Marseilles.

OCTOBER 2ND.—His Majesty's Government authorised a mine-laying policy in certain areas.

OCTOBER 5TH.—In Russia the German Army, which was operating between the front of East Prussia and the Niemen, was beaten all along the line and retreated, abandoning a considerable quantity of material.

OCTOBER 9TH.—The British naval airmen carried out another successful raid on the Zeppelin sheds at Düsseldorf.

OCTOBER 10TH.—Death of King Carol of Roumania.

OCTOBER 11TH.—The Russian cruiser *Pallada* was sunk in the Baltic by a German submarine.

OCTOBER 14TH.—The Belgian Government removed from Ostend to Havre.

OCTOBER 15TH.—H.M.S. *Yarmouth* (Captain Henry L. Cochrane) sank the German liner *Markomania* off Sumatra, and captured the Greek steamer *Pontoporos*.

OCTOBER 16TH.—H.M.S. *Hawke* (Captain Hugh P. E. Williams, R.N.) was attacked and sunk by submarines.

OCTOBER 17TH.—The new light cruiser *Undaunted* (Captain Cecil H. Fox), accompanied by the destroyers *Lance* (Commander W. de M. Egerton), *Lennox* (Lieut.-Commander C. R. Dane), *Legion* (Lieut. C. F. Allsop), and *Loyal* (Lieut.-Commander F. Burges Watson), sunk four German destroyers off the Dutch coast.

OCTOBER 25TH.—A German submarine was rammed and sunk by the destroyer *Badger* (Commander Charles Fremantle, R.N.) off the Dutch coast.

OCTOBER 29TH.—Admiral H.S.H. Prince Louis of Battenberg resigned his position as First Sea Lord of the Admiralty.

OCTOBER 31ST.—H.M.S. *Hermes* was sunk by a torpedo fired by a German submarine in the Straits of Dover.

NOVEMBER 2ND.—The Admiralty declared the whole of the North Sea a military area.

NOVEMBER 4TH.—It was reported that the *Scharnhorst*, *Gneisenau*, *Leipzig*, *Dresden*, and *Nürnberg* concentrated near Valparaíso, and that an engagement was fought on November 1st. The *Monmouth* and the *Good Hope* were sunk. The *Glasgow* and the *Otranto* escaped.

NOVEMBER 5TH.—The German cruiser *Yorck* struck the mines blocking the entrance to Jahde Bay and sank.

NOVEMBER 7TH.—The fall of Tsingtau was announced.

NOVEMBER 10TH.—The *Emden* was driven ashore and burnt at Keeling Cocos Island by H.M.A.S. *Sydney* (Captain John C. T. Glossop, R.N.). The *Königsberg* was imprisoned in the Rufiji Island by H.M.S. *Chatham*.

NOVEMBER 11TH.—H.M.S. *Niger* (Lieut.-Commander Arthur P. Muir, R.N.) was torpedoed by a submarine in the Downs, and foundered.

NOVEMBER 14TH.—Field-Marshal Lord Roberts died at the Headquarters of the British Army in France.

NOVEMBER 23RD.—The German submarine *U18* was rammed by a British destroyer, the *Garry*, off the coast of Scotland.

NOVEMBER 26TH.—H.M.S. *Bulwark* blew up in Sheerness Harbour.

DECEMBER 8TH.—A British squadron under Vice-Admiral Sir Frederick Sturdee sighted off the Falkland Islands a German squadron consisting of the *Scharnhorst*, *Gneisenau*, *Nürnberg*, *Leipzig*, and *Dresden*. Three of these five warships were sunk, including the flagship of Admiral Count von Spee.

DECEMBER 9TH.—Valievo was retaken by the Serbians, who energetically pursued the Austrian forces.

DECEMBER 10TH.—A further telegram was received from Vice-Admiral Sir Frederick Sturdee reporting that the *Nürnberg* was also sunk on December 8th.

DECEMBER 13TH.—Submarine *B11*, Lieut.-Commander Norman D. Holbrook, R.N., entered the Dardanelles, and, in spite of the difficult current, dived under five rows of mines and torpedoed the Turkish battleship *Messudiyeh*, which was guarding the minefield.

DECEMBER 16TH.—In the morning a German cruiser force made a demonstration upon the Yorkshire coast, in the course of which they shelled Hartlepool, Whitby, and Scarborough. They were engaged by the patrol vessels on the spot, and a British patrolling squadron endeavoured to cut them off. On being sighted by British vessels

the Germans retired at full speed, and, favoured by the mist, succeeded in making good their escape.

DECEMBER 17TH.—Great Britain proclaimed Egypt a British protectorate.

DECEMBER 24TH.—A German aeroplane dropped a bomb into a garden at Dover, doing no great damage and causing no casualties.

DECEMBER 25TH.—A German aeroplane flew over Sheerness. Pursued by three British machines and fired on by anti-aircraft guns, it made off towards the East Coast.

British cruisers, destroyers, submarines, and seaplanes made a combined raid on German warships lying in the roads off Cuxhaven. Our ships, while standing by to pick up the seaplanes, were themselves attacked by enemy Zeppelins, seaplanes, and submarines. They beat off the attack and succeeded in picking up three out of the seven airmen with their machines. Three other pilots who returned later were picked up, according to arrangement, by British submarines, which were standing by, their machines being sunk. The extent of the damage by the British airmen's bombs cannot be estimated, but all were discharged on points of military significance.

JANUARY 19TH.—German aircraft raided the East Coast in the evening and dropped bombs on Yarmouth.

JANUARY 24TH.—Early in the morning a British patrolling squadron sighted three German battle-cruisers and an armoured cruiser, the *Blücher*, steering westwards. The German warships turned and made for home, but were brought to action. The *Blücher* was sunk, and two other German battle-cruisers were seriously damaged.

FEBRUARY 2ND.—The Turks attempted to cross the Suez Canal near Tussami.

They were allowed to bring their bridging material to the bank unmolested. When the bridging operations had actually started we attacked them. Our attack was completely successful. The enemy fled in disorder, leaving the whole of the bridging material in our hands, and some of the enemy were drowned in the Canal.

The enemy also attacked us on the El Kantara front, but were easily repulsed.

FEBRUARY 9TH.—In the Black Sea Russian cruisers bombarded a Turkish battery near Trebizond and sank a steamer with her cargo, and the Turkish cruiser *Breslau* bombarded Yalta.

The *Wilhelmina*, the United States ship laden with food for Germany, arrived at Falmouth.

FEBRUARY 11TH.—The Russians fell back from the line of the Masurian Lakes towards their frontier.

FEBRUARY 12TH.—Thirty-four British aeroplanes and seaplanes made a raid on the Belgian coast; considerable damage was done to the enemy's bases and establishments.

FEBRUARY 16TH.—Forty British aeroplanes and seaplanes, assisted by eight French aeroplanes, dropped bombs on Ostend, Middlekerke, Ghisteltes, and Zeebrugge.

FEBRUARY 17TH.—A Zeppelin was wrecked on the Danish island of Fanoe.

FEBRUARY 18TH.—In Lorraine the French carried the village of Norroy.

Another Zeppelin was wrecked off the Danish coast.

FEBRUARY 19TH.—The Austrian Army occupied Czernowitz, the Russians falling back beyond the Pruth.

A British fleet of battleships and battle cruisers, and aided by a strong French squadron, the whole under the command of Vice-Admiral Sackville H. Carden, began an attack upon the forts at the entrance to the Dardanelles. The forts on the European side were silenced.

FEBRUARY 21ST.—A German aeroplane visited Essex and dropped bombs on Colchester, Braintree, and Coggeshall.

The French torpedo-boat *Dague* struck a mine at Antivari and sank.

FEBRUARY 25TH.—All the forts at the entrance of the Dardanelles were successfully reduced.

FEBRUARY 26TH.—Great Britain formally declared a blockade of German East Africa.

The Germans retired along the whole front in the Przasnysz region.

FEBRUARY 28TH.—The *Dacia* was arrested in the Channel by a French cruiser and conducted to Brest.

MARCH 1ST.—The Prime Minister announced to the House of Commons that commodities of any kind were to be prevented, by means of the Allied Fleets, from reaching or leaving the German Empire.

The Russian Army concluded the operations round Przasnysz, where they defeated two army corps and drove them back to the frontier.

MARCH 2ND.—The captain of the British collier *Thoradis* reported ramming and sinking a German submarine off Beachy Head.

MARCH 3RD.—Operations in the Dardanelles were resumed and more forts were silenced.

MARCH 4TH.—The German submarine *U8* was sunk off Dover by destroyers, her crew being saved.

The Russians re-entered Stanislaw and crossed the Lukwa.

MARCH 6TH.—A squadron of battleships and cruisers, under the Commander-in-Chief, East Indies, began the bombardment of Smyrna.

MARCH 8TH.—Six aeroplanes of the Naval Wing, under Wing-Commander Longmore, carried out an air attack on Ostend. Bombs were dropped on the submarine base and on the Kursaal, the headquarters of the military.

MARCH 9TH.—In the House of Commons Mr. Lloyd George brought in a Bill to enable the Government to take over any factory or workshop in which war material could be produced.

MARCH 10TH.—British troops, supported by French artillery, carried the village of Neuve Chapelle, and advanced north-east and south-east of it.

The German losses were very heavy, and 1,000 prisoners and some machine-guns were captured.

The German submarine *U12* was rammed and sunk by the destroyer *Ariel*. Ten of the crew of twenty-eight were saved.

MARCH 11TH.—A British air squadron bombarded Westende, and British aviators succeeded in destroying the railway junctions at Courtrai and Menin.

The German auxiliary cruiser *Prince Eitel Friedrich* arrived at Newport News with the crews of vessels sunk by her.

H.M. auxiliary cruiser *Bayano* was torpedoed in the Firth of Clyde.

MARCH 12TH.—The British troops captured the village L'EpINETTE and gained possession of part of the German lines near Pietre, capturing about 400 prisoners.

MARCH 13TH.—The British troops crossed the brook of Layes, which runs parallel to the road from Neuve Chapelle to Fleurbaix, and between this road and Aubers they captured several trenches.

MARCH 14TH.—H.M.S. *Glasgow* and H.M.S. *Kent* sank the *Dresden* near Juan Fernandez Island.

MARCH 15TH.—The British Army, which the German attack had compelled to fall back beyond St. Eloi, recaptured the village and almost the whole of the neighbouring trenches, in spite of several counter-attacks by the enemy.

MARCH 17TH.—The French troops continued to make progress in the region of Perthes.

MARCH 18TH.—Russian troops reached Mcmel, after crossing the frontier near Gorshdy and beating the German forces, capturing some machine-guns and motor-cars laden with stores.

After ten days of mine-sweeping inside the Dardanelles, the British and French fleets made a general attack on the fortresses at the Narrows.

Three battleships were lost in these operations by striking mines—the French *Bouvet*, and the *Irresistible* and the *Ocean*.

MARCH 19TH.—At Przemysl the garrison made a determined sortie. The enemy was forced back on his own line of forts. In repulsing the sortie the Russian troops captured more than 4,000 prisoners and sixteen machine-guns.

MARCH 20TH.—In the Vosges the Great and the Little Reichackerkopf were captured by the enemy.

MARCH 21ST.—Two Zeppelins attacked Paris in the early hours of the morning. The material damage done was insignificant.

MARCH 22ND.—The fortress of Przemysl surrendered to the Russians.

MARCH 23RD.—A Turkish force, 1,000 strong, was routed near the Suez Canal.

MARCH 24TH.—British aviators carried out a successful raid on German submarines being constructed at Hoboken, near Antwerp.

MARCH 25TH.—The German submarine *U29* was sunk with all hands. The Russians captured an important Austrian position in the Lupkow Pass; 5,000 prisoners and several dozen machine guns were taken.

MARCH 26TH.—French aviators bombarded the airship sheds of Frescaty and the station of Metz, and also the barracks to the east of Strassbourg.

MARCH 27TH.—In Alsace the French troops captured the summit of Hartmannsweilerkopf. The Germans abandoned important material and left numerous dead on the field.

MARCH 28TH.—Belgian aviators bombarded the aviation camp at Ghisteltes.

DAY BY DAY.

Tuesday, March 30.

North-east of St. Mihiel, French artillery forced the enemy to evacuate in disorder the village of Hendicourt.

West of Bois-le-Prete, French troops carried a line of trenches and captured about 100 prisoners.

Wednesday, March 31.

In the Argonne, the French captured 160 metres of trenches.

French aviators carried out a series of raids in the Woevre, in Champagne, in the Soissons district, and in Belgium.

The British steamers *Flaminian* and *Crown of Castilla* sunk off the Scilly Isles by *U28*.

Thursday, April 1.

British aviators made a successful raid on German submarines at Hoboken and Zeebrugge.

In the Woevre, French troops occupied the village of Fey-en-Haye.

The Russian troops captured a series of fortified heights on the Reskid mountains and in the direction of Chokin.

Friday, April 2.

The German submarine *U10* destroyed three trawlers off the Tyne.

On the Niemen front the Russian troops drove back the Germans and inflicted heavy losses.

Bands of Bulgarians made a raid into Serbia. Their attack was repulsed by a Serbian regiment, and they were driven from the field carrying their wounded.

Saturday, April 3.

In the region of the Somme, at La Boisselle, mine warfare continued with marked advantage to the French troops. Near Lassigny and in Upper Alsace German attacks were repulsed.

Sunday, April 4.

The day was quiet on the whole western front except in the Woevre, where the progress of the French troops continued.

On the front to the west of the Niemen fighting developed greatly in favour of the Russian troops.

Monday, April 5.

The French troops captured three successive lines of trenches at the Bois d'Ailly, south-east of St. Mihiel. They also gained a footing in a portion of the enemy's works to the north-east of Régnéville.

CORRESPONDENCE.

MILITARY HONOURS.

To the Editor of LAND AND WATER.

SIR,—If rewards for valour only are taken into account (V.C.'s, D.S.O.'s, and Military Crosses), I think it will be found that the regimental officer has his share. More of these could not be given without cheapening them.

Such rewards as are given to the Staff—e.g., C.B.'s, C.M.G.'s, and brevets—are naturally not obtainable by junior regimental officers. The proportion of Staff to regimental officers who receive these appears at first sight, therefore, to be high, though it is not really so. It must also be remembered that the Staff are selected men, and are, therefore, likely to do better than their regimental brothers.—Yours truly,

A REGIMENTAL OFFICER.

BLINDED SOLDIERS AND SAILORS.

Arrangements for their Comfort and Occupation.
LIFE AT ST. DUNSTAN'S.

To the Editor of LAND AND WATER.

SIR,—The vast number of letters which have reached us during the last few weeks with regard to sailors and soldiers who have been blinded in the war shows so keen a public interest in and sympathy with these brave fellows that I feel I may ask you to permit me space in which to acquaint your readers with what is being done to comfort and to help them.

So far as we know at present, there are in this country nearly fifty soldiers who have lost their sight at the front, including three officers, and three Belgians, whom we are glad to treat on an equality with the British soldier.

We know of only one blinded sailor—a midshipman.

After we had settled in our minds the best steps to pursue, we called into our counsels some of the leading experts among those who spend their lives in the care of the blind. We were gratified to learn that in the main the arrangements we had devised met with the cordial approval of this gathering.

This spacious house, with its fifteen acres of grounds, which lead direct into Regent's Park, and which has been so generously placed at our disposal by Mr. Otto Kahn, is an ideal place for our purpose. An arm of the large Regent's Park lake runs into the gardens, thus rendering easy rowing, an ideal form of exercise for blind people.

The premises are well adapted for the purpose of temporary training-rooms and workshops.

The occupations which are being taught here are:

1. CARPENTRY.
2. BOOT REPAIRING.
3. MAT MAKING.
4. BASKET MAKING.
5. TELEPHONE OPERATING.
6. MASSAGE.
7. POULTRY FARMING, MARKET GARDENING, &c.

These arrangements cover the industrial field which will be, for the present, open to the blinded soldier. In the majority of instances we do not expect to complete the training at St. Dunstan's. Our function here is to discover the pursuit for which a man is best fitted and give him preliminary instruction in it.

The grant which has been made by the Prince of Wales's Fund for the purpose will enable us to arrange for completion of training and to settle the men in life. The cost of running the Blinded Soldiers' and Sailors' Hostel is borne by the National Institute for the Blind, the Red Cross Society, and the Order of St. John.

A special fund has been started from which to supply the men with typewriters and other apparatus, and also to pay the travelling expenses and board and lodging of near relatives who live in the country and who are invited periodically to spend a few days close to their husbands, sons, or brothers.

We invite contributions to this Fund.

Further, the National Institute for the Blind has placed at the disposal of the Committee a seaside home, which it has lately established at Brighton. This comfortable and commodious home will be used as a convalescent resort for men who require a period of repose after being discharged from hospital. It will also be used for week-ends and brief holidays.

The training of the blinded soldier is not confined to industrial pursuits. All the men are learning to read and write Braille, and in most cases are making remarkably quick progress. They learn typewriting, too, and are given lectures on interesting subjects by the leading experts of the day.

The fear of occupying too much of your valuable space prevents my dwelling upon the happy conditions under which our community here lives. A cheerier set of fellows it has never been my good fortune to meet, and the kindness of many friends in providing them with flowers, fruit, and other luxuries is unending.

The ladies belonging to Voluntary Aid Detachments who look after them do much to make their lives bright and happy.

It is not for me to express an opinion as to the perfection of the plans which have been made, but I do venture to say that no blind men have ever been given so grand an opportunity of making good in the world as is afforded to these. Who will deny that no trouble or expense can repay them for the sacrifice which they have made in defending our homes and upholding the honour of the British Flag?—Yours faithfully,

C. ARTHUR PEARSON,
Chairman Blinded Soldiers' and Sailors'
Care Committee.

St. Dunstan's, Regent's Park, N.W.

THE SMALL FIRM.

To the Editor of LAND AND WATER.

DEAR SIR,—Will you permit me to thank "One of the Principals of Another Small Firm" for his kind appreciation of my letter, and also for his interesting remarks as to the procedure of the Government when dealing with small firms? I quite agree with all he says about prices, and I think the Government would, as he suggests, find it very advantageous when obtaining tenders to state the prices usually given for the work, and to allow the firms tendering to put in their quotations, if these prices were too low to enable the firms to undertake the job. One of the chief difficulties of a small firm which has not previously undertaken Government work is to know at what price "about" it would stand a chance of having its tender accepted. Often a great deal of time which might be much more usefully employed is needlessly wasted in getting out estimates at which the Government officials do not have to glance more than once to know that they are hopelessly "out"; on the other hand, firms frequently do not feel justified in quoting for work which they could well do because their machine tools do not happen to be specially designed to do that particular class of work, and consequently they could not do it quite so cheaply as a factory constructed solely for the job. A good definite "lead" from the Government as to prices on each piece of work required would save much time and money and prove to be a real economy in the end.

With the latter part of your esteemed correspondent's letter I am in entire agreement.

Lord Kitchener has said that the need for munitions is urgent; the *Times* has had a leading article on "Shells"; on all sides we hear a loud chorus condemning strikes and disputes, and all delays in and hindrances to output; and in the daily Press we are repeatedly told that the winning of the war depends just as much upon the workshops of the country as upon its brave soldiers.

Well, for our part, we should only be too delighted to be doing our bit. Let the Government give us the work and tell us to go ahead. We would do our level best, and I can assure you that among the small firms strikes are not likely to interrupt output.

But the great and apparently almost insuperable obstacle in the way is the reluctance of the Government to give us the orders. For three months now the firm with which I am connected has been attempting to obtain Government work, and all they have given us up to the present is one small sample order. The majority of the departments sent polite acknowledgments of our letters, and to one we have had the pleasure of submitting some tenders, but so far nothing has materialised beyond the sample order above-mentioned. Yours faithfully,

ONE OF THE PRINCIPALS OF A SMALL FIRM.

OUR AMBULANCE APPEAL.

At the moment of going to press our Fund totals £530, and it is our very pleasant duty heartily to thank all those who have been so generous as to assist us in such a prompt and substantial manner. Further subscriptions are still needed to form a small fund for the upkeep of the motor ambulance. Next week a full list of subscribers will be published.

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THE HISTORY AND DEVELOPMENT OF THE STEAM TURBINE IN WARSHIPS

(concluded)

By "A.M.I.C.E."

After a long series of exhaustive trials it was found that the *Topaz* obtained a speed of 22.1 knots when developing 9,933 indicated horse power, while the *Amethyst* steamed 23.63 knots and developed 14,200 horse-power, notwithstanding the same boiler power was installed in both ships. The economy in steam consumption especially at high speeds was considerable. At the same time, the manœuvring capabilities of the turbine cruiser proved to be quite satisfactory. These trials definitely proved that the steam turbine was superior from every point of view to the old type of engine, and it was decided to install them in future in all torpedo boats.

In 1905 a committee was appointed to consider the question of the design of armoured ships, and the adoption of steam turbines was recommended for all such ships. The *Dreadnought* was the first battleship in the world to be fitted with steam turbines. It must be mentioned, however, that at this stage the Admiralty was probably largely influenced by the Cunard Committee, who at the end of 1904 had decided to install steam turbines in the *Lusitania* and *Mauretania*. An official statement was issued by the First Lord of the Admiralty in 1906 regarding the adoption of turbines in the *Dreadnought*, in which it was stated that although the steam turbine system of propulsion has some disadvantages, it was adopted because of the saving in weight, reduction in working parts, reduced liability to breakdown, and its smooth working, ease of manipulation, saving in coal consumption at high powers, and hence boiler-room space and saving in engine-room complement; also because of the increased protection due to the engines being placed lower in the ship.

The usual arrangement in battleships and battle cruisers is to fit a high-pressure turbine on the outer shaft and a low-pressure turbine on the inner shaft on each side of the ship, so that there are four shafts, each carrying propellers, in each ship. The two inner shafts carry each the cruising and low-pressure ahead and astern turbines. In later types of ships the cruiser turbines have been done away with because the weight and space saved have been utilised to increase the efficiency of the main turbines when running at half power. The three battle cruisers of the *Invincible* class are equipped with turbines developing about 42,000 horse power, while in the *Lion* class they develop about 75,000 horse power. Such ships could never have been built with reciprocating engines, as, owing to the superior economy of modern turbine installations, at least 30 per cent. less boiler capacity is required.

The first foreign warship to be fitted up with steam turbines was the French torpedo destroyer No. 293 in 1902. The steam turbines were imported from the Parsons Marine Company. Although France led the way on the Continent, nothing further was done until the 1906 programme, when another torpedo boat was equipped with turbines, while at the end of 1906 it was decided to fit the battleships *Voltaire*, *Danton*, *Vergniaud*, *Condorcet*, *Diderot*, and *Mirabeau* with turbines. Each vessel has a displacement of 18,374 tons, a speed of 19 knots, and a turbine horse-power capacity of 22,500. These battleships are fitted with Parsons turbines, and the arrangement is practically the same as in the *Dreadnought*. In 1908 the French Navy decided that in future all warships should be fitted with turbines.

In Germany the marine steam turbine was adopted late in 1902, and a small turbine destroyer was put in hand. The vessel *S125* has a length of 215 feet and a tonnage of about 410, and was equipped with Parsons turbines similar to the British destroyer *Eden* already mentioned. In 1903 the small cruiser *Lübeck*, having a displacement of 3,150 tons, was equipped with Parsons turbines, and tests were carried out between this boat and the *Hamburg*—a similar cruiser, equipped with reciprocating engines. The trials were again entirely in favour of the turbine-driven ship. The first large armoured vessel built in Germany with turbines was the battle cruiser *Von der Tann*, which has a length of 561 feet and a displacement of 19,000 tons. This vessel proved thoroughly satisfactory, and attained a speed of 27 knots when developing about 70,000 horse power. The earliest German boats employed turbines made in England, but the later ones were constructed in Germany.

A steam turbine is essentially a high-speed machine and should be run at a fairly high speed in order to get the maximum steam economy. On land steam turbines for generating electric power are run at speeds varying from 1,000 to 3,000 revolutions per minute, but in ships this is not possible, as the screw propeller must be run at a fairly

low speed. In order to get the maximum efficiency out of a turbine on board a ship it is necessary to run the turbine at a high and the propeller at a low speed. At present both are connected rigidly, and therefore it is necessary to compromise on the speed question, the result being that the turbine is run at too low and the propeller at too high speed.

At the end of the year 1913 Parsons turbines were installed in the following number of ships:—

Country.	WARSHIPS.		MERCANTILE SHIPS.	
	Number.	Total horse-power capacity.	Number.	Total horse-power capacity.
Great Britain	226	4,339,300	98	928,790
Germany	38	1,508,600	5	191,000
France	34	601,800	12	164,500
U.S.A.	37	553,300	8	86,000

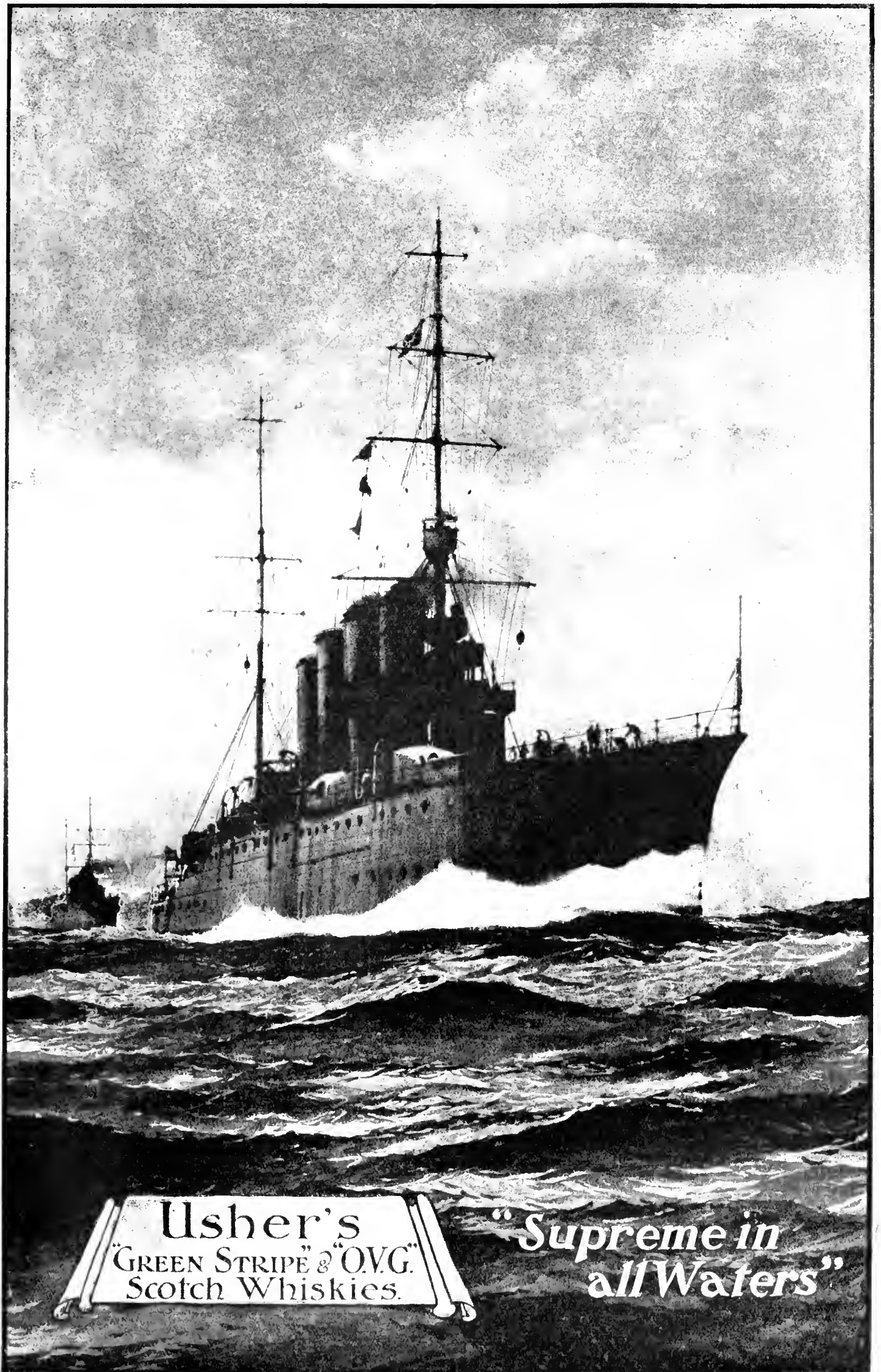
There are great possibilities in the interposition of a reduction gear between the high-speed turbine and low-speed propeller so that each may work at its highest efficiency. The application of mechanical gearing to destroyers was preceded by extensive researches. The Parsons Marine Company carried out a series of experiments with the *Vespasian*—a cargo boat of 4,350 tons displacement. There are two turbines, which are connected by means of mechanical gearing to the propelling shaft. The steam turbine runs at about 1,250 and the propeller at 63 revolutions per minute. The results have confirmed the theoretical considerations as regards economy obtainable by this new application and shown great reliability in running. The loss of power in the gears is small, amounting only to some 2 per cent.

There are at present a few destroyers in the Navy fitted with geared turbines, while the application to larger warships is under consideration. The geared turbine has already been installed in several Channel steamers, and excellent results have been obtained.

Several other methods of power transmission between the propeller and turbines have been proposed, the most important being the hydraulic and electrical transmission. The hydraulic system has been developed in Germany by Dr. Föttinger, of Dantzig. In this system the steam turbine drives a centrifugal pump which delivers water to a hydraulic turbine, which is connected directly to the propeller shaft. This system was employed in the *Königin Luise*, of the Hamburg-Amerika line, which had a displacement of 1,800 tons. The steam turbines ran at 1,825 and the propellers at 453 revolutions per minute. It will be remembered that this vessel was fitted out as a mine-layer and was sunk by the *Amphion* on August 5 near Aldeburgh. The system gave complete satisfaction, and it was understood that the German Admiralty were considering its application to a very large warship.

In the electrical transmission system, which has been successfully developed in America, high-speed turbines are coupled to electric generators, which in turn drive slow-speed motors, the latter being coupled to the propeller shaft. The U.S.A. collier *Jupiter* was fitted up with the electric transmission gear, and exhaustive trials were carried out. A few weeks ago it was announced that it had been decided to fit the latest American super-dreadnought, the *California*, with the electric transmission gear. The *California* will have a displacement of 32,000 tons, a speed of 21 knots, and will carry more weight of armour than any previously built battleship. The great steam economy thus obtained has resulted in a considerable reduction in boiler and condenser-room space. The decision of the American naval authorities is of great importance, and the performances of the *California* will be watched with interest. An advantage of the electric and hydraulic system is that the astern turbine is not required, while a further advantage of the electric system is that all speed control and manœuvring can be done directly from the bridge without signalling to the engine-room staff, owing to the flexibility of electric power.

The possibilities of the various systems of "speed reduction" in warships are very great. Owing to the higher over-all efficiency of the low-speed propellers and high-speed turbine greater steam economy, with a consequent reduction in weight and space, is obtained.



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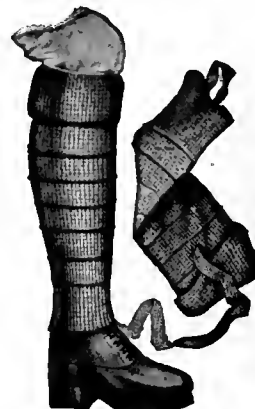
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Vol. LXV No. 2762

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THROUGH THE EYES OF A WOMAN

By MRS. ERIC DE RIDDER.

A Cross-Examination

"WHAT are you supposed to write about?" asked Cecilia, as the train having shriekingly run through a seemingly endless tunnel, emerged at last into sunshine and peace. Cecilia and I were week-end visiting bound together.

This was the sort of question that could only be counter-questioned.

"I mean," she said, in reply to my query, "that I should never be surprised if I were to find one week you had devoted a whole paragraph to the best way of button-holing flannel petticoats, or to the making of a cake without flour, sugar, butter—"

"If you can give me such a receipt," said I, breaking into this without delay, "I will not only give one paragraph, but two to it, if indeed I do not devote the whole article to such a splendid invention. Everybody would clamour to read it. Perhaps, though, this cake wouldn't need cooking?"

"Don't be so silly," snapped Cecilia, whose temper railway travelling never improves. "You know quite well what I mean. If you do not write about cooking, I should say that was the one thing you did not write about."

Personal, with Due Apology

"It is a general article," I said, without much brilliancy, but with more or less accuracy.

"Very general," said Cecilia, whose temper still seemed ruffled.

"To tell you the truth, my dear," said I with a praiseworthy attempt at explanation, "my article often seems to me, myself, to be a humble imitation of the Walrus and the Carpenter, who talked of many things."

"There are some ideas for you," said Cecilia, who can never resist an *Alice* quotation. "You have not yet talked of 'shoes, and ships, and sealing wax, of cabbages, and kings.'"

"I could write pages upon shoes," said I, thinking of the full short skirt of the moment, and its demands upon footwear.

Cecilia said nothing, but—perhaps unconsciously—put forth a small foot, perfectly shod in darkest brown crocodile leather.

"No," I said, following out my train of thought, "it is on account of the war, were it not for that it would be a dress article. As it is, it's a mixture, because there seems so much else to write about as well."

"I have got a few new clothes to show you," said Cecilia, who was rapidly becoming good tempered again.

"You are quite right though," she went on magnanimously. "There is heaps more to write about, perhaps that explains your mixture article."

"The mixture article," I said, "exists for the mention of anything of interest to women. For that reason the letters that arrive asking for mention of such and such a fund, or such and such a work, are always very welcome."

"They receive attention," quoted Cecilia.

"Always," said I, "and generally the written word."

"Then," said she, "in future I shall expect a full account of everything to which I lend my valuable patronage, or —"

But the threat, if threat it was, was lost in the bustle of arrival at the station of our destination.

On Atmosphere

That night after dinner, and before the masculine element had emerged from the dining-room, conversation turned on

the subject of atmosphere. The different atmospheres to be found in different houses, the varied atmospheres in various shops. An American girl who had just crossed the Atlantic, and narrowly escaped shipwreck through a German submarine, gave us her views, which were well worth attention. She outlined the difference there is between a second-rate shop, and one of assured reputation. It is one which apparently strikes the American mind very sharply. Every woman listening knew what she meant. In some places the customer is almost forced to feel that those who serve pay but a minimum of attention, and that only because they are paid to do so.

It is here, of course, where all the better class shops score. Their staff is trained to study customers, their whims, and their ways, and to gain the knowledge quickly. It is always pleasant to go to a shop where one is recognised, and given a full meed of courteous attention in consequence. It flatters everybody's vanity to feel no mere unit of a shopping public to be dealt with as quickly and expeditiously as possible, but a customer whose visit is valued.

The Clothes We Need

It is the personal note in business that pays, and in the fair American's opinion, with Cecilia as seconder, this is the reason why the Regent Street House of Peter Robinson has made its huge success. The atmosphere is admirable here, the trained attention as perfect as possible. "You always get well looked after there, and they seem to know by instinct what you want," said Cecilia, coming into my room to say good-night, after we had gone upstairs to bed. She was wearing a satin wrapper in a lovely shade of geranium pink, which set off the pale gold of her hair.

I learnt that these wrappers are to be bought in different colourings at this Regent Street house for the modest price of 29s. 6d. They are really delightful garments, and just the thing needed after the long days so many are spending just now engaged upon some charitable work or another. It is the greatest relief to slip out of a street suit into something soft and clinging. These wrappers have a roll back collar, and drape from one side to another beneath a cleverly finished fastening, but they are of sufficiently simple design to serve excellently as dressing gowns.

Lingerie, of course, is always a feature here, and at present there are some unusually fascinating nightgowns to be secured. They are of finest French lawn, embroidered by hand in a bold, yet dainty floral pattern, and marvels of cheapness for 12s. 6d. A fine edging of lace outlines the neck and prettily rounded sleeve, and the quality of all the fabrics used is so fine that the moderate price is doubly amazing.

And the next morning, when the girl from the States appeared in one of the best cut crêpe de Chine shirts it has ever been my fortune to see, I was not surprised to hear this hailed from the same address, and that 15s. 9d. had been its purchasing price. It was made of that good-looking heavy weight crêpe de Chine which always appears to advantage, and has duplicates in black and all colours. Amongst the primary features are a semi-militaire collar, and large pearl stud fastenings, and its other advantages can be seen in Peter Robinson's catalogue. Much praise also is deserved by an art silk sports coat in every colouring, cut with the requisite fulness for the new skirt, and pouching prettily at the back over a tasselled girdle. And the price is but 33s. 6d.



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CHAPTER THE FIFTH.

AND as they eat, the wise man proceeded with his tale. "Look thou at this shoe. Mark the generous proportions. Torture it and learn the toughness of the fabric which bends but breaks not. Thou didst observe not long since the marks my beast had left in the dust. Didst also observe how sure-footed he was? Place thy finger in this cunning channel. Dost understand? Consider how yon smith, even in this small village, had of this shoe. In every spot the length and breadth of this our land it is the same. So great a name has it attained that more would buy than shoes there are to satisfy them. What, thou wouldst satisfy thy hunger a little? Thou art right. Perchance we would then be in better case to deal with so important a matter."

(To be continued.)

MORAL: A demand which exceeds the supply and always has, is a perpetual and unanswerable argument for the goods.

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THE WAR BY LAND.

By HILAIRE BELLOC.

NOTE.—This article has been submitted to the Press Bureau, which does not object to the publication as censored, and takes no responsibility for the correctness of the statements.

In accordance with the requirements of the Press Bureau, the positions of troops on Plans illustrating this Article must only be regarded as approximate, and no definite strength at any point is indicated.

THE TURN OF THE TIDE IN NUMBERS.

THE tide in numbers has already turned fully upon the West. It is not far from turning upon the East.

That is the explanation of the whole situation during the last fortnight.

Numbers in men, numbers in material, decide a war in its largest aspect. Their power is particularly clear in such a war as this, where the whole efforts of whole nations are being put forth, each to avoid the permanent wounding of the national soul.

If this simple, but fundamental, truth, that *numbers* are at the root of all, had been kept in mind, opinion would have been less confused in the past than it has been. We should not have heard the "organising power" of the enemy treated as something miraculous, nor should we have heard exaggerated the unpreparedness of the Allies.

The truth is, and has been from the beginning, that upon the moral side the enemy had but one clear advantage. In a number of his subsidiary guesses as to how modern war would turn out, particularly in his own tactical experiments, he was right. And this gave him, as I shall show in a moment, a great superiority in certain forms of material at the outset. But in nothing else was he the superior of his foes—least of all in grand strategy.

His one asset—the one great thing that really counted—was numbers.

Take the theories of modern war in which he proved right; his power to maintain close formation; the effect of high explosive shell ranged by air-work upon permanent fortification; the use of heavy pieces in the field, &c., &c. The fact that the enemy was right in his theories on these things and that the Allies were, on the whole, wrong, gave him at once the advantage of numbers in the right material against his opponents. He had prepared an immensely larger supply of machine guns, a weapon closely allied to the use of close formation in attack. He had prepared a vastly superior number of heavy pieces distinguished for their mobility and a vastly greater amount of munitioning for them.

But it was the other element of numbers, the mere numbers in men, that made most difference. And the greater part of the self-reproach the Allies address to themselves for the unexpected but necessary trials of the opening campaign in the West is simply a misunderstanding of what must almost certainly happen when sixteen men are attacking ten. The business of the smaller number in that rude trial is not to win, for it cannot, but to hold out in spite of the hammering—that is, if time proposes to be ultimately upon their side.

Now time was ultimately upon the side of the Allies. Britain was not a conscript country, and her reserves of men, of potential numbers, needed time to appear. If time could be gained, it would

be possible to train and equip them. The great reserve in numbers of Russia would similarly appear when sufficient time had been gained. Much the greatest effect of time in favour of the Allies was that after enough time had passed to allow for the making of heavy artillery and of munitions therefor by the French (with their natural genius for this arm, and with their readiness to learn any new thing), and after the corresponding, though necessarily lesser, effort on the same lines, in this country, superiority would definitely pass from the enemy to us.

There was a second factor in which time was going to be on the side of the Allies, if that time could be sufficiently extended without the enemy's getting, through his superiority in numbers, a decision. It was the factor of political attitude, and it appeared in all sorts of ways. The enemy began by being cocksure; failure was bound to depress him. The French in all their history have fought better in the latter stages of a campaign than in the earlier. Air-work, mainly under British example, everywhere advanced upon its moral side. It was not a superiority in material that ultimately gave the Allies in the West the preponderance they now enjoy in the air: it was skill and daring.

Finally, there was one last factor which put time upon the side of the Allies, and that was the enormous enemy wastage.

Everything combined to swell that factor: the enemy's tactical tradition; his necessity for winning quickly; his use of new levies very rapidly raised; his becoming involved in a winter campaign for which he had not prepared, and which in places broke down his medical organisation (*e.g.*, his ambulances in Poland during December). It is certain that when the full statistics of the fighting are published, we shall find that the higher estimates of the enemy losses have been more nearly accurate than the lower. And I believe that whenever the end comes the comparative figures, especially in the West, will surprise official opinion at home.

Had all parties to the war pursued the same policy in respect to the publication of numbers the truth I am here emphasising, that the enemy wastage was, and is, startlingly greater in proportion than that of the Allies, would have stood out very clearly. But they do not pursue the same policy, and therefore the image of the truth is confused in the mind of many.

The Germans, for instance, publish long lists of killed in which names appear often very late, and sometimes months after the casualties they refer to. They publish long lists of wounded which certainly do not give every case—and no wonder. They do not publish lists of sick. They give in details, down to the last unit, the numbers of those they call their prisoners, sometimes adding the civilians to the soldiers, sometimes confusing the two categories, sometimes separating them, or mentioning one only.

The Austrians supply us with hardly any information. We have to deduce from chance utterances or private reports all that we know.

The Russians publish nothing official, save, very rarely, a few big facts: as, that they had at one moment (some months ago) rather over 100,000 German prisoners; that they had about a fortnight ago over 800,000 Austrian prisoners.

The French have deliberately pursued a policy of complete reticence, varied only by occasional purely local pieces of information: "In taking such and such a trench we captured 100 prisoners and a machine gun." Of their own losses they publish no casualty lists. We have had just one statement, about four months ago, with regard to the number of wounded men who have been received in hospital, and the proportion that have been discharged. We can guess from their method of conducting the war, and from their use of reserves, certain maxima and minima of losses, but we can do no more. The British publish full casualty lists in which ultimately every kind of loss, except that through sickness, is recorded. But they do not publish the numbers of the prisoners they take.

With methods so various obtaining in the five Great Powers at war, there has, I repeat, been a confusion in the public mind upon this great main fact of numbers, and in particular upon the immense German and Austrian wastage which has brought about a turn of affairs in our favour earlier than the best judgment had thought possible.

We can be rid of that confusion if we bear clearly in mind the leading fact with which I opened this article: the tide has turned strongly in the West; in the East it is already nearly slack water.

The tide in numbers having turned has, short of the entry of further enemies into the field against us, turned for good.

Germany and Austria have still a certain amount of untrained material to hand, which they can put into the field between this and midsummer. But they have not more than the full British reserve of men coupled with the young recruits which the French have trained and have not yet used. Superiority in numbers of actually equipped and present men in the West is already established, and it is now only a question of the completion of equipment for that superiority to go on increasing steadily. The same is true of munitions for the heavy guns; the same is true of air-machines; the same is true of the numbers of the heavy pieces themselves.

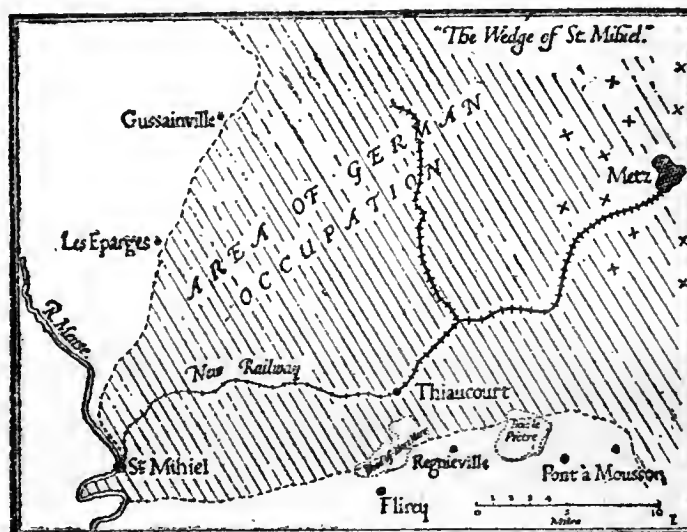
In the East, the long-lasting numerical inferiority of the Russians to the coalition opposing them began to change (presumably) about a fortnight or three weeks after Vladivostock was open. At first a dribble and later a stream of equipment and munitioning then became available at the Russian front. Had it been possible to force the Dardanelles that stream would already have become a flood.

Russia was blockaded by two things: the enemy and winter. Winter has raised the blockade in the Far East. She maintains it in the White Sea. But she will not maintain it indefinitely even there. The twenty-eight miles of river between Archangel and the open sea will be free by the middle of May at latest; perhaps earlier. We know, of course, that if the ice-breakers had

remained undamaged Archangel might have been partially kept open throughout the winter. As a fact it has been closed for fully four months. Whether the narrow gauge railway to Vologda has been broadened yet in its whole length we do not know; but if it has another stream of munitioning will in some four weeks begin to pour in to the Russian front from the north. We may take it that on the Eastern front the problem of numbers is solved.

Now let us see how this factor of numbers is working in the two fields which have been most prominently before the public during the last week—the *St. Mihiel Wedge* and the *Carpathian Front*.

THE ST. MIHIEL WEDGE.



The French are hammering at either limb of the great salient in front of Metz which has its apex at St. Mihiel upon the Meuse. They are attempting, by threatening the communication which runs through the centre of this wedge, to compel the enemy to withdraw from St. Mihiel and to straighten his line.

That is their objective.

But it would be a great error to read into this attempt some mysterious efficacy in the mere shape of that salient.

The French are not hammering at the St. Mihiel wedge simply because it sticks out.

If the French reach the lines of communication, the railway which has been continued beyond Thiancourt to the river, and thus compel the enemy to withdraw, they will have achieved a great local success. They will be cheered, and we shall have the papers full of a new tone for a day or two. So people were cheered by the pounding of the advanced German trenches at Neuve Chapelle and their occupation by British troops. So people were cheered by the heavy work in the Champagne district, which advanced the French line by an average (perhaps) of the distance between Hyde Park Corner and St. Paul's. But neither at Neuve Chapelle, nor in the Champagne, nor here in the Woevre was the end in view a mere advance, whether of one mile or of twenty. The end in view was the wearing down of the enemy's numbers and the fretting of that long line of his until it should be too thin to hold. Supposing the enemy thought of St. Mihiel as something all-important to his prestige—strategically it is no longer of importance to him, for by this time he knows very well that he cannot make the strap meet the buckle and that he will not invest Verdun—well, supposing

that he continues to make St. Mihiel a point of honour. Can he save it?

Of course he can. It is only a question of men. He has only to run a greater and a greater risk of having his line pierced somewhere else. He has only to withdraw men from Flanders, from the Vosges, from the Plain of Alsace, from the Aisne, and keep on pouring them in to hold either limb of the wedge which the French are thus impiercing.

There is in this matter not a little misunderstanding due to the traditional meaning and effect of the word "attack." "This attack," men say, "will necessarily be far more expensive to us than the old defensive was." Or, again: "We must expect very great losses, for we shall be the attacking party." But under the conditions now established upon the Western front, those terms hardly apply. The attack does not take the form of a number of men in the open rushing to swarm over a well-defended obstacle, and suffering in proportion to the difficulty of that attempt. The defeat of the enemy does not take the form of their having, after a long defence behind earth where they have suffered little, fallen back in order and defended some new position. If that were the form of the present fighting along the Western front the attack would, indeed, be enormously more expensive than the defence. But it is not the form. The form is this:

The Allies being fairly free from enemy observation (a freedom they owe to their established superiority in the air) concentrate munitions for their heavy guns upon a particular point; they then, after a certain delay for such concentration, deluge a narrow sector of the enemy's front with heavy gun fire (in which they also have a marked

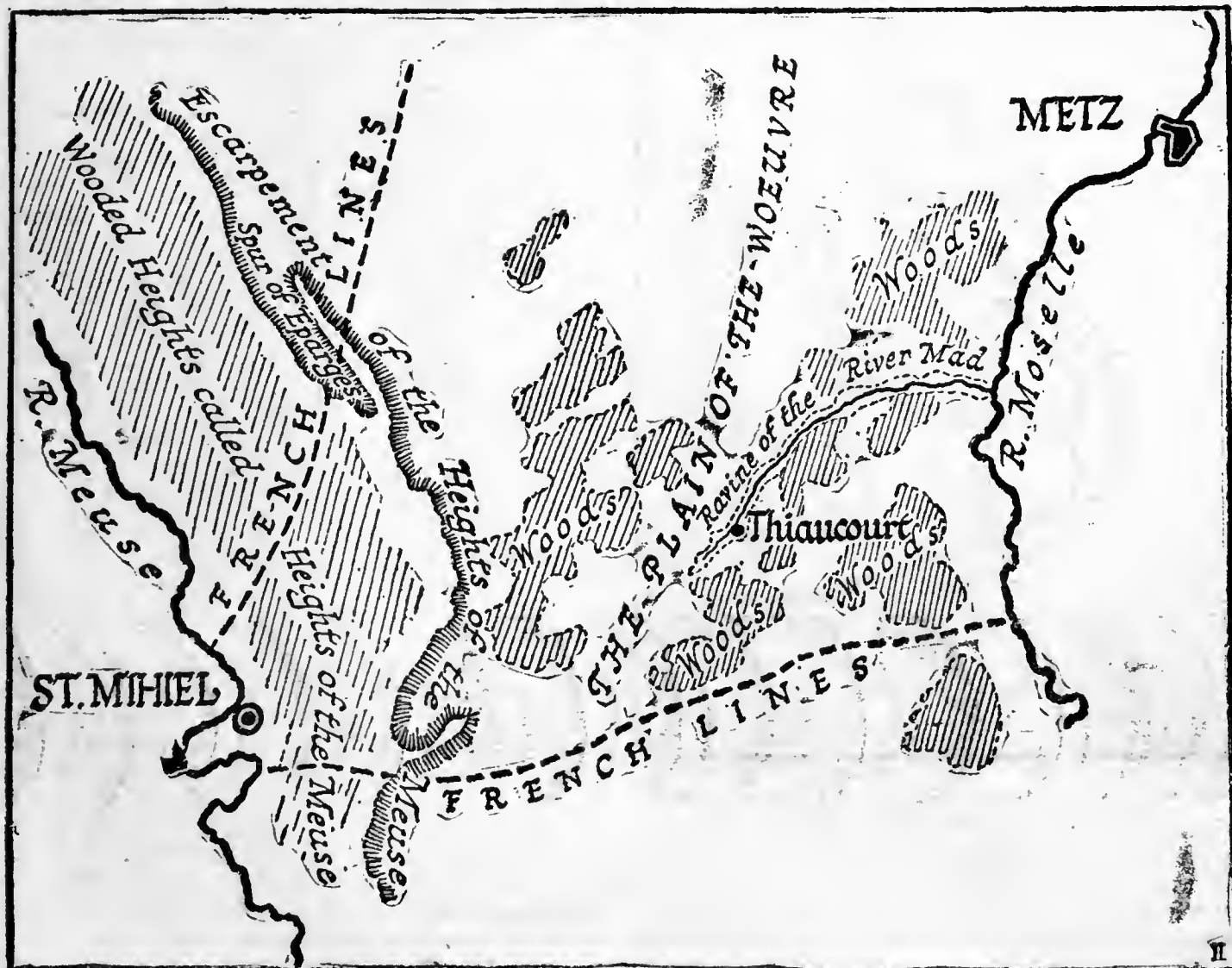
superiority, and the accuracy of which again depends on superiority in the air). They then, the moment that tornado of fire ceases, rush the most advanced trenches of the enemy.

Fighting of that kind does not mean that the attack spends more *men* than the defence. The attack spends enormously more ammunition, and it subjects its artillery to much more wear and tear, but not more than it can replace.

The second chapter in these efforts is still less an example of expenditure in men by the attack. It consists in the rallying of the enemy in a counter-offensive, and in his attempt *without* a superiority in heavy guns or in air work to take back what he has lost, or at the worst to hold that part of his second or third line of trenches which he had preserved. And this counter-offensive is normally far more expensive to him than to the Allies whose pressure he is trying to stem. He can always stem it, as I have said, if he chooses to bring up more men; but only by losing, day after day, great numbers of those men over and above the corresponding losses of his opponent, and the men must come from somewhere.

Every one of these bits of work—that at Les Eparges the other day; that at Regnieville; that at the wood of Montmare; that at Goussainville—does its bit in slightly increasing the numerical superiority of the Allies on the line against their enemy.

At Neuve Chapelle weather and certain miscalculations made the German counter-offensive particularly severe for the British. Nevertheless the total German losses were far heavier upon that narrow front than the total British losses. In the Champagne three solid weeks of tremendous work with something like half a million men en-

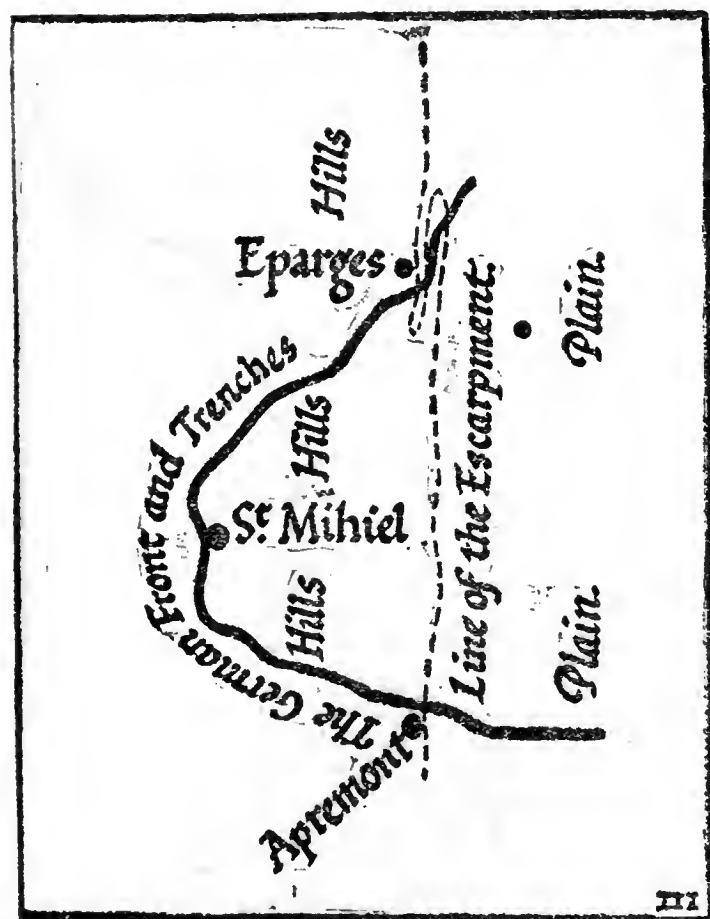


aged first and last in territory the size of South London resulted in no conspicuous advance, though advance there was. The Germans saved the railway line behind their trenches. They lost the crest of the watershed and some hundreds of yards of ground. But they came out of the struggle much weaker in proportion to the French than they went in, and that was the object of our Allies in initiating the actions they thus took between Souain and Ville-sur-Tourbe.

It is the same story along the whole front from Altkirch to the North Sea, and it is a story that can have but one ending *unless* civilian opinion is misled and fails the armies.

Let us turn next to the details of the attack on the St. Mihiel wedge.

The ground upon which this struggle for the wedge of St. Mihiel is being decided is singularly simple. It consists in two clearly-marked districts: The rolling plain, called the Woivre, on the East (an average height of some 700 feet above the sea), and the range of hills, called the "Heights of the Meuse," on the West. These latter consist in a ridge which slopes up from the Meuse River to an average height of over 300 feet and an average width eastward of about eight miles. It then falls extremely rapidly in a sort of wall—500 to 600 feet high at the northern end and nearly 1,000 at the southern—down on to the plain. And the plain, the Woivre proper, stretches to the Moselle, and is a district of numerous woods, meres, and small watercourses amid large open ploughed fields. The whole district is, therefore, the belt between Meuse and Moselle.



This wall forms one of the very sharply-defined landscapes of Europe, and may be compared to the escarpment of the North or South Downs or of the Cotswold in this country. While the summits of the hills along this escarpment dominate the plain, even in the north, by 600 feet, the saddles often fall to less than 400; but as one

looks along that chain of heights from some village at the foot, such as Hattonville, it presents an almost artificial appearance of regularity.

This conspicuous feature in the ground of the present effort is transverse to the fronts of both armies. The wedge or buckle of which the apex is at St. Mihiel cuts the escarpment of the heights of the Meuse in two points—the northern one near Les Eparges, the other on the south near Apremont.

But even if there were no hills here at all the problem would be much the same. It simply consists in the effort of the French to reach the single line of communication upon which the holding of St. Mihiel depends, and the efforts of the Germans to prevent their reaching it.

That single line of communication is, as has been pointed out in past articles, the old single-line railway which runs from Metz up the ravine of the little River Mad to Thiaucourt, and the continuation which the Germans are reported to have built on to it in the last six months from Thiaucourt to St. Mihiel. I believe it will be found, when the thing can be examined in detail, that this continuation has been run (as I show it upon the accompanying sketch) up out of the Mad valley,



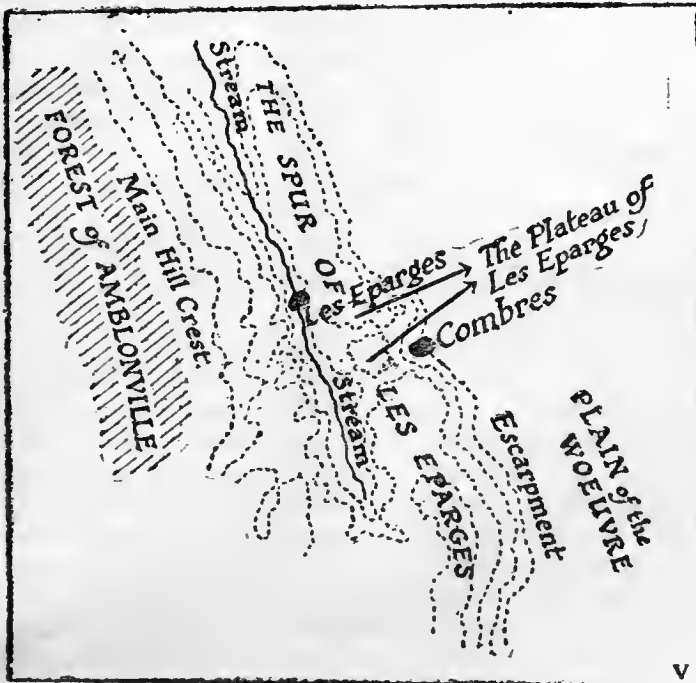
to Vigneulles, and then over the comparatively low saddle to the village of Creue, and so down the ravine called the Rupt de Creue to the Meuse, and so to St. Mihiel. The last part of this guess may be wrong, because it would bring the railway rather close to the French lines, and it is possible that the new rails are laid over the higher wooded country to the south and more directly towards St. Mihiel, as at A—B on the sketch. At any rate, the piercing of this line at any point would make the position at St. Mihiel impossible.

Now, the place where it is most immediately threatened is Thiaucourt, where it comes nearest to the French advance, which has thrust trenches out north of Regnieville, as we know. And it may therefore be asked why the position of the spur of Les Eparges on the north is of such importance.

The value of a special effort at this latter point consists in this: That so long as the French remain in possession of the spur of Les Eparges they can from behind the ridge and on its western slopes in wooded country establish positions for their heavy guns which will command at known and fixed ranges all the nearer part of the plain now open to their complete observation.

The position to be captured at Les Eparges was the rounded boss of a summit upon a plateau which stands out curiously from the mass of the hills parallel to their main axis, and is separated

from them by very steep-sided ravines in which the village of Les Eparges lies. To the west of this ravine the hills, long held by the French, are a mass of woods, and the summits of these hills top a



contour 400 feet above the stream which runs through the valley. A rounded plateau on the eastern side, to the capture of which the French bent all their efforts, is only 300 feet above the water in the village.

This plateau is fairly free of wood, and the view from it commands the whole plain of the Woivre. Beyond it and below, on the edge of the plain, is the little village of Combres. It is fairly clear that the capture of this height must have been effected by a concentration of heavy gun fire from behind the ridge of the forest of Ambonville, to the West, and that here, as in every other case

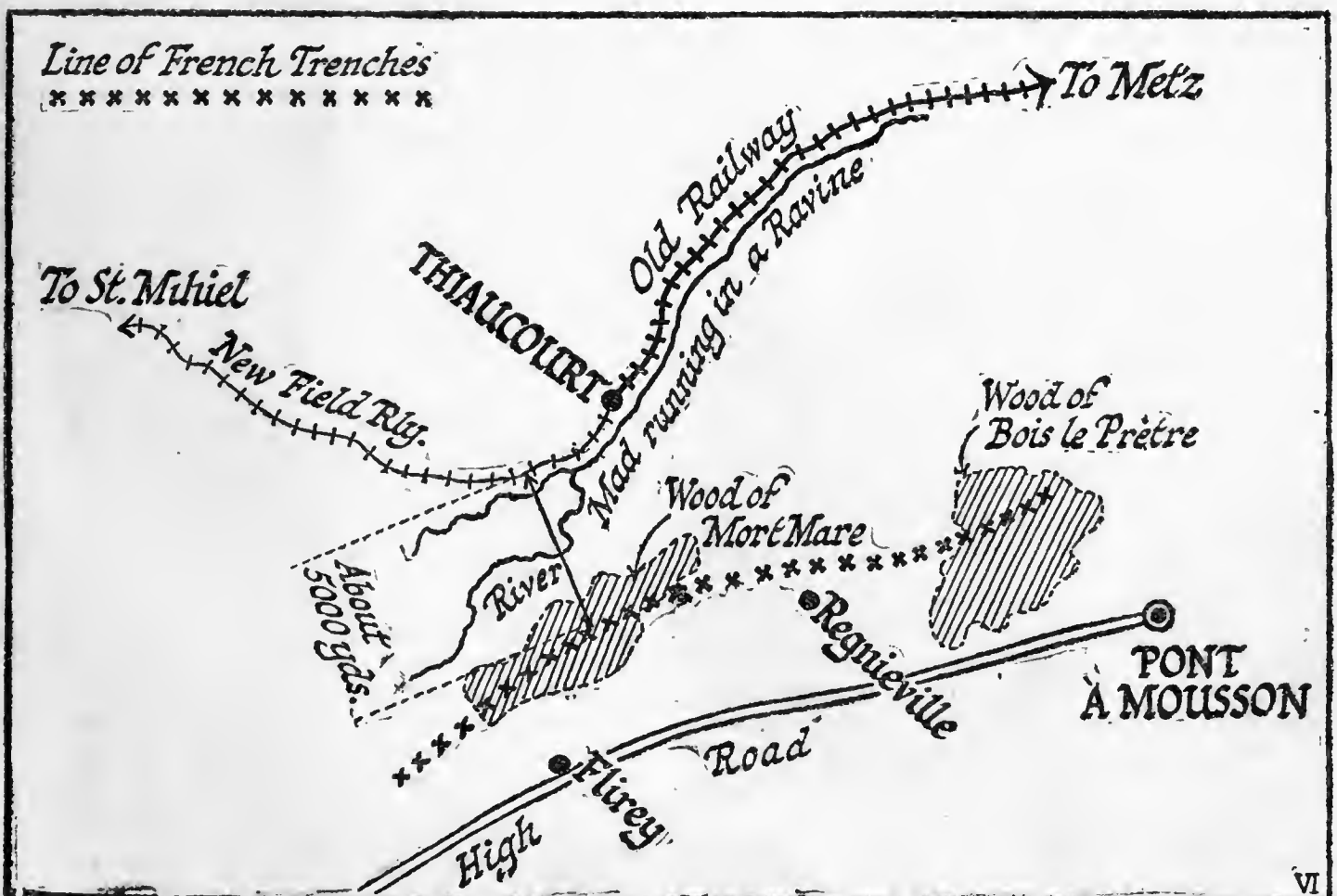
along this front, it is the new superiority in heavy pieces and their munitionment which is wearing down the German line.

The local importance of the plateau above Combres is peculiar and worthy of study, for it led at once to the bitter tenacity of the defence, and the continuous concentration of the assault, with the very heavy losses involved upon either side.

It was not a case of capturing an elevated gun position, for the plateau is dominated more and more by the rising crest of the spur southward. Nor was it, as it would have been in the old days, the obtaining of a commanding height, whence the plain below could be shelled, for a gun position of this sort is but a disadvantage in the present trench warfare against any well-hidden position from which heavy gun fire can be directed by air work.

But the point of the plateau between Les Eparges and Combres was that it thrust out a hill in front of future heavy gun positions to be established in the forest to the west, it permitted batteries there established to shell positions in the plain, their effect perpetually observed from the new summit, and themselves shielded by it. Therefore, the enemy had erected regular fortifications upon this plateau, now long-established, and attack on it had the effect of compelling the enemy to concentrate upon that one spot great numbers of men. The narrow hill between Combres and Les Eparges was, as it were, the nucleus of the defence which the Germans had established from the line of their railway up to the neighbourhood of Fresnes.

The line is not cut by the occupation of the plateau. There is plenty of opportunity for the enemy to entrench to the east of the captured position, but here, as everywhere, the object to be attained was the compelling him to bring up renewed masses of men, and to sacrifice them in the



attempt to keep a point to which he attached peculiar importance.

On the south limb of the wedge the French effort is complicated by the chance there is there of possibly dominating the railway, but meanwhile this effort necessarily draws great masses of the enemy to the threatened points, and, therefore, achieves much the same numerical result as the attacks on the north.

The conformation of the ground is such that it is not possible for the rails leading from Thiaucourt to St. Mihiel to go at first very far away from the course of the little River Mad. For the Mad runs after its first part in a very steep trench, the sides of which can only be negotiated by tunnelling or the use of a light railway and break of gauge. The wood of Montmare, in front of Thiaucourt, the village of Regnieville, the western part of the Bois du Prêtre, in front of Pont à Mousson, between them give the line of the French trenches, about a third of the way from the high road to the Mad, or, measured in ranges, you have from the French trenches to the Mad no more now than 5,000 yards; if anything, the trenches of the wood of Montmare, though we do not quite know where they cut that wood, are a little closer to the ravine than those of Regnieville.

THE CARPATHIAN FRONT.

On the Eastern front the new business is also a matter of numbers, though after a rather different fashion from the West. Why are the Russians thus able to press slowly mile by mile on to the crest of the main range and down the further slopes of the Hungarian side of the mountains? Because their numbers have here increased and are still increasing. The fall of Przemyśl released another quarter of a million; much more, it freed the whole Galician railway system and permitted new streams of equipped men to be fed and munitioned upon the mountain front from the advance passes in Galicia and from the main passes in Russia itself. Meanwhile the new munitioning of Russia with the end of the winter still swelled the numbers, and the pressure upon the Carpathian barrier may be compared to the pressure of water upon some containing wall when that water rises higher and higher by continued addition.

How was this threat to Hungary to be met? Only by a pouring in of corresponding numbers upon the other side. Germany must lend her desperate ally first three Bavarian corps, then four more corps, making seven in all; yet the slow Russian advance continued. It is said that she will attempt to find somewhere yet another 100,000 men, and see whether the dam can be mended. But those men must come from somewhere, and every man taken round to the Carpathian front weakens Germany in every other part of the field.

Throughout the war until the present phase the Germans and the Austrians met the local pressure of the numerically inferior Russian forces in the same way. They massed their greatly superior numbers by the use of their superior railway system in some unexpected direction and struck a blow at a point which the Russians could not afford to lose.

When at the end of November, just as the attempt of the Germans to break out in Flanders had failed, the Russians were at the gates of

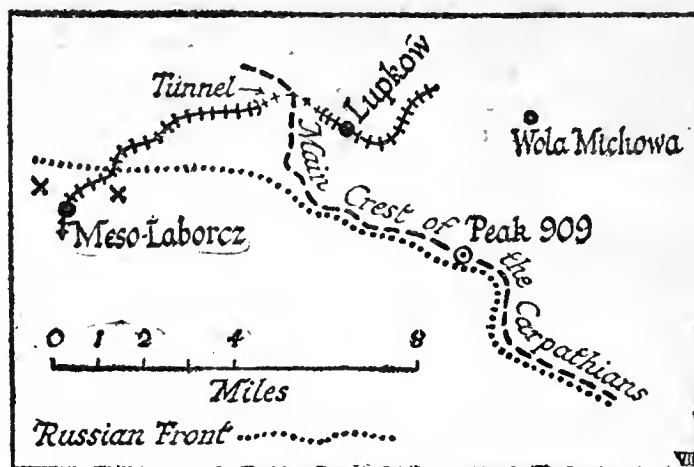
Cracow, eminently superior numbers were swung up north and the blow was struck at Warsaw which came within an ace of succeeding. The pressure on Cracow was relieved.

As, towards the end of the winter, the Russians had perceptibly increased, and as the direct attack on Warsaw had failed, a new and a last concentration of great German numbers was made in East Prussia, and the month of February was full of this renewed surprise attack from the north to cut the railways behind Warsaw. It failed in its turn. But it created a diversion. It employed vast numbers of the Russians upon what was for the moment a purely defensive scheme.

Here we are in the middle of April, the snow is already melting upon the southern slope of the Carpathians, the pressure of the Russians there gets heavier and heavier, the danger is extreme. Why does not some new diversion relieve that pressure and conjure that peril? Because the enemy no longer has a superiority in men wherewith to effect such a diversion.

On both fronts, then, it is the same story. The tide in numbers has turned.

As to the exact positions of the Russians on the critical part of the Carpathian front, near Lupkow, by the last telegram received on Tuesday, it is as follows:



On the Carpathian front it is interesting to note that the Height 909, which is situated just south-east of the summit of the Lupkow, remained in the hands of the enemy until last Thursday, and was the last point of this front upon the main ridge to remain till the general Russian capture of that ridge between the Rustok and the district west of the Dukla.

The point 909—the highest peak in this district—thus forming an exception to the general Russian grip upon the watershed, having fallen, something like forty miles of this line, or a little more, is now in the hands of the Russians.

It would be an error to regard the mere surmounting of the ridge, even upon so broad a sector, as the conquest of the range.

It is here, as everywhere, a question of numbers. Could the enemy by some miracle pour in great masses of new numbers, he would check the advance as securely upon the Hungarian as upon the Galician side, for the broad belt of wooded slopes on the Hungarian side offer as good opportunities for resistance as does the corresponding belt on the eastern slope of the mountains. It is true that the snow has disappeared more largely from the Hungarian slope than from the Galician, for it is the slope turned away from the wet winds

and it is the slope that looks towards the south. But this is not wholly a disadvantage to the defensive. It gives better opportunities for trench work and much better opportunities for concealment.

What the gradual disappearance of the snow in the whole range during the next few weeks will accomplish is the provision of pasture for the Russian irregular cavalry, and the freeing of separate bodies from being tied to the few roads across the hills, and in particular the horsemen will be able to come into action.

It is probable that the defensive along the range has been very far from continuous. It has been concentrated upon the points where the roads cross, because during the winter all advance on the part of the Russians has been tied to these roads. But as the weather moderates, the defensive will have to be spread out more evenly along the whole line, and this is a factor in weakening that line which must not be neglected.

Meanwhile, the efforts to check the slow advance of our ally over these mountains are not always without fruit.

Where the Lupkow Pass Railway comes down from the summit on the Hungarian side, round about the station of Mesolaborcz (at X X on the above sketch), there has been a series of sharp actions which have quite held up the Russian advance in that district, and have probably inflicted a local reverse upon our ally, for the Austrian claims to 10,000 unwounded prisoners remain uncontradicted, and the Russian line has here been quite stationary for three weeks past.

But it is not a local success of this kind, nor the more numerous small and steady advances of the Russians upon the whole of this course, which really decides the issue. The whole thing is a furious corps à corps; a swaying, now just upon, now just over, the summits of the hills; a wrestling

bout in which superiority of numbers will be the ultimately deciding factor, and which every new week's further equipment of the Russians inclines in their favour.

A NOTE ON NEUVE CHAPELLE.

There has been a tendency, as the exact truth about Neuve Chapelle began to come through, not from the Press, but from the great numbers of men who have returned wounded from that action, to under-rate its effect and to misunderstand its character. It is therefore worth while to re-emphasise both. As it has been very well put in the phrase of one correspondent, to whose experience I have had access, "The thing for the public in England to note is not how much might have been done, but how much *was*."

Now what was done may be briefly tabulated as follows:

1. Through superiority in air-work now fully established, great quantities of munitions were concealed for several days without the enemy's guessing what was happening. *It is the first time this has been done upon the Western front.*

2. The local weakness of the enemy through the same superiority and through the co-ordination of this effort with the attacks in Champagne was equally established.

3. At a heavy expense, especially during the counter-offensive, to our own side, it inflicted a still greater loss upon the enemy who could afford it far less.

4. It discovered the continued or rather improved capacity for a vigorous offensive in men who have passed months under the strain of trench work.

5. In general, it showed that, with a sufficient preparation, the piercing of the line or its shortening under the threat of piercing was certain.

COTTON.

I MUST beg my readers to permit me yet another reference to cotton, and that for the purpose of giving more details upon the subject.

Everyone by this time knows in a general way that cotton is gunpowder, and that yet cotton has been allowed to come freely into Germany through the blockading cordon; which is exactly as though guns and submarines and consignments of shell had been allowed to get through the cordon, save for this difference: that Germany and Austria-Hungary can, at a certain rate, make guns and shells and submarines, whereas for cotton they are absolutely dependent upon supply from over the sea—that is, upon the goodwill of Great Britain among the Allies.

But while this very startling fact is now public property, the precise significance of it in detail is less generally appreciated. How much cotton there is, what it is worth, how much the enemy probably use, the difference that even at this date the preventing of his getting this material would make—all these points are left vague in the public mind. If the public can get a grip of them it will help to strengthen opinion.

There are probably in Germany now, in reserve, as I said last week, one million bales of cotton. It is doubtful whether Austria has any

reserve. Supposing, therefore, that all supply from neutrals in Europe and all supply from overseas were to stop at this very moment, the enemy would presumably have to fall back upon rather less than 500 million pounds, or, in round numbers, 250,000 tons of cotton.

It is believed that hitherto he has used about half his cotton imports for textile fabrics and about half for making what I shall continue to call his *gunpowder*, because that inaccurate, old-fashioned term gives the quickest impression of the truth.

He has therefore in reserve, having accumulated it during these months during which we have permitted him to obtain it in spite of the blockade, about 125,000 tons of gunpowder, which, if he could afford to stop all his civilian weaving and to throw immense numbers of men out of employment, could possibly be increased to a maximum of something less than 200,000 tons in round numbers.

I give these figures first and insist upon them because the extraordinary situation by which enemies working for the destruction of this country are supported in obtaining the material with which to destroy it can only be defended upon the plea that cotton has already come in in such quantities that belated action taken now

would be useless. In other words, the groom may plead against being asked to shut the stable door now that the horse has been stolen.

Well, if Germany has a maximum potential reserve of less than 200,000 tons of propellant explosive and a practical reserve of not more than 125,000 tons, let us next ask ourselves how long this would last, and whether it could be supplemented in any way supposing that after all these months of war we did stop the public from going on.

The estimates of what the enemy is using vary, of course, enormously. It is an exceedingly difficult problem to work out even as a conjecture. Austria, for instance, uses a powder in which there is a proportion of glycerine higher than that in the German powder. But both of these are higher than the proportion in the French service, and in the American (among others). Again, we do not know what secret modifications may not have been introduced in the period during which Germany was actively preparing for this war—that is, between 1911 and 1914—three years which, as we know, were given up to the designing and munitioning of the great campaign that was to be entered on just after the harvest of 1914.

It is, further, very difficult to guess nearer than a maximum and a minimum very widely separated what the average expenditure is per day, though we know accurately enough the expenditure in cotton of any particular weapon. The French 75, for instance, would shoot away a bale of cotton in four hundred rounds, and the largest existing guns would shoot it away in less than two. The small arm ammunition, the expenditure of which is perhaps the most difficult thing to calculate, uses up about a bale of cotton, I believe, in about 80,000 rounds, rather less than more. A machine gun actually in the field is provided first and last with about half a bale of cotton, and every company in the field, apart from its machine guns, is provided first and last with about three bales of cotton.

By this I do not mean that your machine gun or your company will not get rid of more cotton than that in the war: it will get rid of enormously more. But I mean that your first provision is at least upon that scale.

The lowest estimate—and I fear it was once the official one, too—has put the total expenditure of cotton by the enemy at 300 tons a day. The most expert estimate I have seen puts it at over three times that, at 1,000 tons a day.

Now, it is wise to keep one's estimates always *below* the figure that most helps one's argument, even though one has good ground for accepting such a figure. We will, therefore, heavily scale down the maximum of 1,000 tons and stay at 750 tons.

Three hundred tons cannot be accepted for a moment. It is based upon those older calculations which this war has completely upset. Even 750 tons is less likely than 1,000. There are a number of observations all pointing to the larger rather than the smaller figure. Both Germany and Austria used from the beginning an enormously greater number of machine guns in proportion to their forces than the Allies had allowed for. The attack throughout this war has everywhere been so persistent, the losses before an attack failed so heavy, that the expenditure of small arm ammunition by the soldier, as well as by the machine gun,

has been quite out of proportion to what even the enemy expected. Again, the heavy gun, which is, of course, the great glutton of cotton, was relied upon by the enemy in this war in a fashion which the Allies had not foreseen, and was used by them with a prodigality which has called forth at last a similar or even superior effort upon our side in the West.

In the East, apart from what were until quite lately his superior numbers, the enemy still relies upon the much greater supply he has of heavy pieces and of munitions for them. While—most significant and most calculable of all the proofs—we have the fact that the enemy, although he prepared this war for so long, is, and has long been, clamouring for cotton; a truth easily proved by the rate of his recent import and his willingness to pay, as we shall see in a moment, at a very high price for the cotton he does get.

Let us now recall the estimates of reserve which have already been given—125,000 tons reckoned for, 200,000 tons available at a pinch—and we can easily see the result. The enemy now has gunpowder for about another three months of war, or at the most another nine months or so. That is, supposing the war to go on at its present rate and the enemy to lose no stores.

The first thing we have to remark upon stating these figures is that even upon the estimate most favourable to ourselves the immediate cessation of cotton import would still leave the enemy able to continue at the present rate to the end of the year. That is the basis, of course, of the argument in favour of despairing of future action on account of results of the past action. That is the argument for not shutting the stable door because the horse has certainly been stolen. But we should pause a moment at this stage in the consideration of our matter to consider certain further aspects of it.

In the first place, no one can guarantee that the war is to go on at the present rate. If we allow the enemy to obtain great masses of cotton in the immediate future, he will be able to develop in the West perhaps a renewed lavish expenditure of heavy gun ammunition such as that which marked his first bid for the victory that he so narrowly missed.

In the second place, the moment the siege of any place in the enemy's hands begins, we shall have a sudden leap up of expenditure, on his part, of cotton. The same is true of the defence of any obstacle behind which he may lie, such as the Rhine.

Then, again, we must remember that in all calculations of this sort, though it is wise to take a moderate estimate against our own wishes, it is also wise to leave no chances to the enemy. If his real reserve is smaller than we imagine—which it well may be—if his real expenditure is much higher than we think; if, for instance, he is using cotton at a rate 50 per cent. greater than we have allowed for, his reserve is already smaller. It would hardly last out the summer, and any chances of our being able to starve him in gunpowder at the earliest possible moment should obviously be taken, even if by our own action we have allowed him to accumulate this great store.

Again, the action of your enemy becomes embarrassed long before his last munitions are exhausted. The mere condemning of him to husband his ammunition would be equivalent to putting him under a very heavy handicap.

Again, we must allow for the possibility of his losing stores. He must have lost, for instance, the other day, in Przemyśl, a huge quantity of accumulated propellant explosive. A future success of the same sort on our Western side, in Belgium, for instance, would have a similar result.

All these considerations point one way, and show the utility—I should have thought the imperative necessity—of stopping the supply at once. But let us next see what chance of supply he has through neutrals.

There are two sets of neutrals. What may be called the North Sea group and Italy. The neutral Balkan frontier cannot be used for the importation of cotton on any large scale. Now, from Italy the enemy is not at the present moment obtaining cotton, and has not obtained it for some time past, I believe—a significant indication, by the way, of the policy of that country. From the North Sea neutrals the enemy has been obtaining every kind of munition which we have allowed to go through.

We must always remember, by the way, that this is in no way an unfriendly or illegal act upon their part. The neutral sells you provisions and munitions, if he can reach your market. It is the enemy's business to prevent his doing so if he can, but not the neutral's business to diminish his own chances of trade. If we are right in eliminating the Italian cotton stopped in transit—as I am informed we are—we may probably estimate the total amount which the remaining neutrals, the North Sea group of neutrals, could now spare to Germany, if further effort were regulated so as to supply their own needs alone, at about another 25 per cent. added to the present German reserve. In other words, supposing Germany and Austria could now carry on for four months with what they have, the neutral countries in Europe which are willing to provide them could extend that four months to five; if for eight months, then to ten; but no more. Such, at least, would seem to be, in a matter necessarily conjectural, the situation. The argument on that side, therefore, that the horse is stolen and that the stable door does not need shutting is not very strong. And we may conclude at once the whole of this part of the discussion by saying that if we were perfectly free to stop the gunpowder going in now we obviously ought to do so and that it would be of very great practical effect.

If we are not free that lack of freedom must be due to one of two calculations or to a combination of both. First, it may be put forward that if we interfered with Germany's imports of cotton the United States would regard this as an unfriendly act, and that what we obtain from that source would fail us. It is for those who have all the available official knowledge in the matter, which no private critic can pretend to, to decide whether this is the case or no. But meanwhile the private critic and the public in general are possessed of certain very obvious facts in the matter which certainly do not make the argument any stronger. We know, for instance, that for £1 paid by Germany for German munitions the Allies are paying a great deal more than £10, and one does not see a man giving up £10 or £15 worth of trade in order to save £1 worth.

Further, we may remark that we have not hesitated to inflict upon our own Dominions and our Allies restrictions which this policy has not

imposed upon a neutral country. We prevent wool going into Germany, and wool is an Australian product. I understand that we prevent Indian cotton and Egyptian cotton going into Germany. It is American cotton that goes in alone.

But there is no need—or at least there appears none, to one having no more information than is open to the general public—to inflict any hardship upon this powerful neutral.

The cotton we buy at the present moment in open market for British use we get to-day for just under sixpence the pound. Germany in her need is willing to pay, I believe, about double this. Had we adopted the policy of preventing this reserve of ammunition from growing up in Germany (and if we had, the war might well be over now) we could have paid for the total of her present reserve with a sum of somewhat more than ten million pounds. Even if we had compensated the American exporter at the rate Germany is *now* ready to pay (a thing we need never have done if we had begun early), twenty millions would have met the bill.

So it comes to this, that something which would have ended the war perhaps already, and certainly would have appreciably shortened it, while at the same time ensuring victory, has not been done, although that something would only have cost the Allies much less than 1 per cent. of expenditure they have already had to meet: would have cost Britain alone less than a week of war.

Before leaving the subject there are two more points to be mentioned. The first is the use of substitutes for cotton, the second is the supply for the future.

The most obvious substitute which occurs to one, which has already been mentioned in these columns, is wood-pulp. But I am informed that there could be no question of the substitution of wood-pulp for cotton in the course of the present war. The results obtained by experiment are unsatisfactory. The change would be, in the course of a great struggle, impossible. Cotton with impurities or already made up into stuffs is also out of the question. We may take it that if we stopped the enemy's import of this raw material nothing could replace it.

Lastly, let us note the supply. There will be no cotton of the next crop available for Germany during the critical period of stress immediately before us. The picking of cotton is a summer and early autumn business, and it is with the winter that the new supplies come in. Therefore, apart from supplies still available, the critical period of the war for the enemy and for ourselves, which is approaching, will also be one in which the restriction of cotton import concerns a lessening stream of commerce.

CONCLUSION ON NUMBERS.

I began my notes of this week with the capital statement that the tide in numbers had turned. We shall see during the remainder of the war how that prime factor will affect the enemy's decision.

It must be remembered (and it is forgotten perhaps more in this country than among our Allies) that the enemy has never presupposed in his military writings, in his strategical school, in the inmost of his military mind—which affects the very training of his recruits and the whole moral standpoint of his armies—the possibility of finding himself in an inferiority of number. He has

always worked on the presumption of superiority. He has masked that presumption under a number of foolish titles, indicating a moral rather than a numerical ascendancy. But a numerical ascendancy it was in his mind, and a numerical ascendancy it remains. All his plans of war prove it. His whole scheme of fortification proves it. How will he behave when he in his turn has to fight under the conditions which the French, the British, and the Russians suffered throughout the autumn and winter? What plans will he make corresponding to the plans of the French for saving all that could be saved during the extreme peril of the first days of the war? With what coolness will he deliberately sacrifice his Lilles and his Lodzs when the time comes for such sacrifices? How will he conduct a retreat in the face of superior numbers? How will he act when here and there he has to fight his Le Cateaus with one gun to his opponent's four? What effect upon his Government will it have when superior forces with heavier arms are as near to any one of his half-dozen vital centres as Von Kluck was to Paris on Sedan day? Nothing but the future can tell us how he will behave under circumstances of this kind, which he never believed possible, and to which for nearly fifty years he has deliberately shut his eyes.

He may show an unexpected tenacity, quite unlike anything he has shown in the historical past. He may even display that supreme quality in generalship which exactly weighs the political against the military objective, and at once, without so much as a day's hesitation, sacrifices the first to the second. He may "resurrect Buonaparte to save Napoleon."

On the other hand, he may suffer from the bewilderment which so commonly overtakes those who deliberately cherish illusion and who imagine that by some witchcraft a blind confidence in success produces it.

But whichever of these two spirits he shows—the first, which will prolong the war, and perhaps secure his more lasting defeat, but save him in his own eyes before history; or the second, which

would bring the war to a very rapid conclusion and leave the Allies immediate and very difficult tasks of settlement—one thing is certain: before he is under the necessity of attempting the better attitude at all, before his peril threatens him with bewilderment or braces him to resistance, he will get some powerful influence to bid for peace.

There is a formula going round, more commonly accepted among the Northern than among the Southern of our enemies, but diffused throughout their whole body, that may be translated as follows:

"We have not been victorious, but we cannot be defeated."

Treated as a military formula, such a sentence is simply meaningless. It is as meaningless as that other phrase dear to many a politician, "Defence, not defiance." There is no such thing in military history or in military fact as the mere defensive, save as a prelude to disaster. If you are convinced that you can never pass from the defensive to the offensive, then you are convinced that you are beaten.

But though the phrase and the idea are meaningless in a military sense, it is not for nothing that they have been sown broadcast throughout the Germanic body. The harvest to be reaped from that seed is, the enemy hopes, a "draw."

It is desired that opinion among the Allies, civilian opinion, should come to regard the whole thing as a deadlock, and to believe that they have in front of them an enemy who, while he has failed in his attempt at conquest, will never himself be conquered. It is designed to produce an opinion which will regard the prolongation of the struggle as useless for either side and as imperilling the whole of our civilisation without achieving any further definite result. If this opinion prevails, and if, just as our superiority in number begins to tell, the enemy obtains his inconclusive peace, it will mean for the future, and perhaps for the immediate future, no further conflict upon the Continent, but action specially directed against *this* country. That is quite sure.

THE WAR BY WATER.

SUBMARINE BLOCKADE AND LEGAL ISSUES.

By FRED T. JANE.

NOTE.—This Article has been submitted to the Press Bureau, which does not object to the publication as censored, and takes no responsibility for the correctness of the statements.

THE submarine "blockade" still continues to be the main topic of interest in the naval war. If half the rumours one hears be correct, the blockade (of some of our ports, at any rate) is sufficiently "in being" to have acquired the appearance of a legal status, or something approaching thereunto.

If we are going clearly to understand this naval war, its real meaning, and know how we actually stand, it is of the first importance to discard undue froth and verbiage about "pirates," "paper blockades," and so on, and so forth. These things merely come in the zone of thought and sentiment: they do not enter practically the realms of solid fact.

For the last week or two I have endeavoured to impress upon my readers that the submarine is a *new arm*, and to indicate how and why on that account it must necessarily continually rise and fall in importance until it arrives at its proper level.

In considering the blockade, therefore, the first thing to take into account is not so much what the submarine is *going to be* at some future date, which we cannot definitely determine, but rather what it is at this actual moment in this month of April, 1915.

Now, here at the outset it is necessary to say something to counteract the prevailing impression that the Germans are employing some kind of "wondercraft" with which they stole a march on us. Ideas of this kind are all right for the sensational Press, or for wind-bag German naval experts, like Count von Reventlow. The German submarine U36 and others of her kind have been described as remarkably large, mysterious craft; but, as a matter of fact, U36 chanced to have been photographed by the captain of one of her victims, and (unless false numbers were employed) she is to all intents and purposes a replica of all her predecessors, from U17 onwards, and an exact sister to U25 and later boats.

Quite apart from measurements which can be worked out from the photograph that was taken, we have to remember that ever since Germany made a bid for Sea Power her policy has been consistently conservative, consistently a case of going slow. Startling or even considerable innovations have invariably been left to other navies—Germany watching and following cautiously and methodically, changing her designs very slightly and very gradually.

This policy left her behind in the adoption of the turbine, the adoption of the largest possible guns, the best types of

small cruisers and destroyers for modern naval needs, and it kept back her submarine development—that is to say, she did not hasten to adopt the sea-going submarine, and our E class had been in existence some two years before Germany followed with boats of about the same size (*i.e.*, somewhere around 800 tons). There was, therefore, never any serious reason to suppose that the six boats of the 1914 programme, U30 onward, would differ materially from other predecessors.

As for the fifty or sixty boats laid down on the outbreak of war, it is as certain as anything can be that they will be exactly replicas of U36, for the simple reason that no nation, let alone so methodical a nation as Germany, would in war time embark on anything in the nature of wholesale construction of craft in any way experimental. The risk of failure is obviously all too great to be undertaken. A naval war is clearly not the time for experiments on a grand scale.

We may take it, therefore, that Germany is conducting the blockade with boats of the type that she has produced in the immediate past, and put all stories of super-submarines out of court.

Now, the German boats are quite good boats—inferior to ours of *equal* date, because our Navy has been consistently progressive, while the Germans have been content to proceed on more conservative lines. As boats, however, these Germans are very good, well designed, and of considerable radius. That—coupled with some system of supply—has rendered them capable of reaching places and remaining off places which before the war would have been considered unattainable and impossible. In fine, the Germans have demonstrated to their own satisfaction their ability to blockade, in so far as appearing to keep just within the letter of the law can be pleaded.

In strict International Law the blockade is, of course, not effective, because the area claimed to be blockaded is altogether out of proportion to the means available. That no blockade can be expected to stop all vessels from breaking in or out has always been accepted; but it has always been strictly laid down that for a blockade to be deemed effective prevention of ingress to or egress from the blockaded ports must in the vast majority of cases be effectual. That is a condition of affairs which most certainly has not obtained.

So far as can be gathered, the practice of German submarines is to show themselves off a port with set purpose—this has the effect of temporarily stopping all ingoings and outgoing. The submarines then apparently secretly move off elsewhere, leaving it to our patrols to hunt vainly for them. This is not the invariable rule, but it seems to be a fairly common event, and to it even may partly be due the circumstance that our losses only average about one merchant ship a day.

Now, if a hostile submarine deliberately shows herself, she must be doing so with some definite object in view. The object would appear to be a vague attempt to comply (or, at any rate, appear to comply) with the letter of International Law. Under this a blockade is not raised if the blockaders withdraw for a time on account of *stress of weather*. It is raised if the blockaders are driven off by the other side or if they *voluntarily withdraw*.

The voluntary withdrawal of surface ships can be observed and proved; the voluntary withdrawal of submarines cannot be observed, and is hard to prove; while “*stress of weather*” is just sufficiently vague to be capable, in the hands of a clever lawyer, of being translated into all kinds of things on the lines of “*circumstances alter cases*,” plus the argument that when the laws of blockade conditions under which they act are not allowed for.

At any rate, the point is that there do exist obscure issues which could be argued about; and it is of very great importance to note that the Germans are evidently making an effort to secure some kind of legal case for themselves. If that means anything at all, it can only mean that they realise the prospect of having to explain their actions to the world at some future date, and this again implies that the possibility of ultimate defeat enters into their present calculations. A victorious Germany would have no qualms about International Law. So much for one phase of the question.

We now come to the other side of the matter—the sinking of merchant ships without warning, leaving the crews to drown.

Our view of this procedure is clear enough, we regard it as piracy, and wanton, murderous piracy at that. But it will enable us to form a clearer conception of the exact situation if we endeavour to visualise the matter for a moment from the German point of view, always bearing in mind that if—as seems established—a shadow of justification for the blockade itself is being sought, similar “justification”

is unlikely to be ignored over the greater issues involved in the methods of destruction which are employed.

Here, when we come to examine the subject as a whole, I think we shall find that the German official statement was careful to say vaguely that it *might not* always be possible to save the crews, or words to that effect—in any case, loopholes were left for possible future arguments on the lines of “thought this was one of the merchantmen which carries guns for defensive purposes.” Further, it will be noted that it is only in the minority of cases that destruction without warning (*i.e.*, piracy) has taken place; in many cases, taking circumstances into consideration, a good deal of calculated courtesy has been shown.

We may, if we choose, attribute this to the circumstance that German naval officers able to slaughter non-combatants in cold blood are few and far between. An equally probable hypothesis is that (this fact being realised) no general order about sinking without warning was ever issued, though one or two officers may perhaps privately have been allowed to understand that such actions would not be disapproved of.

This absence of orders in black and white can, of course, be used to give a clear field for official disavowals of complexity at any suitable date; the offenders being made scape-goats as convenient, or allowed to plead as best they may, the “thought she had a gun trained on us” excuse. In support of this hypothesis is the fact that where a submarine has been seen after a sinking without warning incident, the circumstance of her number being painted out is generally or always noted. This renders it impossible to bring the crime home to any particular boat.

To the above must be added the further important question of the exact legal status of a merchant ship which attempts to ram a submarine; especially when the matter is further complicated by the fact of rewards having been offered for success in such attempts.

International Law is quite clear on the subject of resistance. The merchant ship may (we are considering the legal position only, be it remembered) try to escape, but any act of resistance renders her a legitimate prize, even though she be otherwise innocent.

Now, the ram, or using the ship for ramming purposes, is a weapon as old as the Battle of Salamis. To attempt to ram a submarine is, therefore, technically, as well as actually, “resistance,” and any such action apparently places the merchant ship in the combatant category—that is to say, legally entitles the submarine to destroy her without notice! As ramming, or attempts to ram, have undoubtedly taken place, any ordinary police-court lawyer, to say nothing of a specialising international jurist, could make out a quite plausible case for every act of “piracy” which has taken place. The submarine captain has merely to swear that the quarry appeared to be about to attack him or was attempting to attack.

So it is, therefore, that though German “piracy” may be utterly foreign to the spirit of the law or all ideas of international morality, we are still faced with the fact of some possible technical legal justification—in German eyes perfect justification—if properly manipulated.

In this connection the at first sight apparently merely childish and hysterical outburst in the presumably inspired German Press over the destruction of U29 takes on some considerable significance. Without waiting for any information on the matter, the Germans roundly assert that U29 was treacherously sunk, decoyed to doom, slaughtered while saving life (this last being presumably due to the fact that Captain Weddigen, of U29, had earned a name for carrying out his unpleasant duties with humanity and courtesy).

The outcry is important as further evidence of German desire to drag in legal issues; in this case to manufacture an argument of the “Even if our actions have not been quite legal, neither have yours” type.

Now, from all the above two central facts emerge. Of these the first—already alluded to—is that, for reasons of her own, Germany has not ignored legal issues to anything like the extent that she is supposed to have by the British public. The second point—one to which I drew attention two or three weeks ago—is that neither psychologically nor financially has the blockade been a German success. None the less, it is being persisted in. The natural question is—Why?

Plausible explanations are fairly plentiful. As simple and plausible a one as any, and the most generally accepted one, is that it satisfies the German public that its expensive Navy is “doing something”—at any rate, in one direction. This explanation, however, seems rather far-fetched. German public opinion is mainly concentrated on military matters, and military rather than naval men appear to have the chief control of the German Fleet. It is, there-

fore, not very probable that these soldiers would go out of their way to continue or demand naval operations which—being devoid of military significance in the way of assets—would merely be a sort of free advertisement of the existence of the German Navy.

Similarly we can discard as rather improbable the theory of the German Fleet driven desperado and prepared to resort to any and every expedient. There are no indications that the German Fleet is yet so driven; while experience has now taught us that several seemingly (from the war standpoint) purposeless movements had really considerable method in their apparent madness. And so we shall not go far wrong if we suspect that the apparently futile submarine blockade, with its curious occasional strivings to observe some kind of technical legality, is devised with some ulterior object in view.

Place this alongside the fifty or sixty odd new submarines which are now nearing completion, and it needs no great stretch of imagination to see in the submarine blockade something of the nature of a feint intended to cover a future great and concerted submarine attack on our warships.

At any rate, this is by far the safest hypothesis to adopt: the tendency to regard the German Fleet as a more or less negligible factor, which prevails in so many quarters, being a very dangerous one. The battle fleet is intact and has been added to since war was declared. It is too much to hope that the big battle cruisers are damaged beyond repair; there are certainly as many new destroyers added as those which have been lost, while submarines are on the verge of being very considerably increased numerically. Only in light cruisers is there any deficiency that matters.

This deficiency has its serious side, for the German Fleet is to that extent deprived of "eyes." But since all the indications are that the intention is to rely upon the submarine as the capital arm, the lack of light cruisers should not be built on too much. Substantially the German Fleet remains "in being" just as much as it was six months ago. By all the lessons of history its *morale*, from confinement to harbour, should have deteriorated; but here again we will be wiser to assume too little rather than too much. The German Navy, manned mainly from an inland population, is not and never has been permeated with "sea sense." In the past the confinement to harbour of a shut-in squadron generally worked out at a deterioration of "sea sense." The non-existent, however, cannot be liable to deterioration.

DARDANELLES AND BLACK SEA.

The dearth of news from this area of operations more or less continues. Whether it be due to suspended action or to the withholding of news till some tangible result can be reported it is idle to speculate too deeply, though the former may be suspected because of the bad weather just now prevailing. Mostly we have to be content with more or less reliable stories of a large French expeditionary force and the presumption of considerable military operations in the early future.

Mine-sweeping is proceeding, but large-scale bombardments are no longer reported, and we may take it that any attempt to emulate what Sir John Duckworth did by rushing in the past is now definitely abandoned, if, indeed, it were ever contemplated. Forts—owing to their extraordinary recuperative power—have, as the more thoughtful generally anticipated, proved themselves a match for ships, despite the advances of modern gunnery.

There is some reason, however, to hope that the Turkish *morale* has suffered somewhat during the last month; so that a gradual wearing-down of resistance may be anticipated.

This, perhaps, is evidenced most by the curious proceedings of the *Goeben*. She has been patched up in some way, and was sent into the Black Sea recently—presumably as a species of bogey rather than aught else. At any rate, on meeting some of the Russian Black Sea Fleet—which theoretically she should have been able to destroy in detail—she turned tail and ran for it, being under fire for some hours without doing or receiving (apparently) any particular damage. The presumption is that owing to injuries previously received her speed has considerably deteriorated—for she seems to have been only just able to get away. The Russian guns were probably outranged. The bad shooting of the *Goeben* may be attributed in part to damaged turrets, in part to deteriorated *morale*.

How far her crew are Turkish and how far German is not known, but it is fairly apparent that this ship is incapable of securing for Turkey the command of the Black Sea.

It remains to be seen how far the Russians will use their command of the sea. Their reported exploit of having penetrated mine fields in order to engage forts at close range does

not impress one as having been either useful or particularly reasonable. For the rest, without a land force in co-operation it is clear that the ships alone cannot accomplish anything against even merely moderate resistance in the Bosphorus.

Here, then, matters as regards Constantinople may remain for some considerable while—possibly till, as in the Crimean War and in the American Civil War, vessels are extemporised capable of dealing with the particular situation involved. In both these campaigns forts were dealt with by towing, or slowly propelling, what were virtually heavily-protected floating forts into close proximity with the works to be destroyed.

THE HIGH SEAS GENERALLY.

The armed German liner *Eitel Friedrich* is now definitely interned at Newport News, U.S.A., where the solitary remaining corsair, *Kronprinz Wilhelm*, has since put in—her supplies having been cut off. Here she, too, will probably be interned, as once having been located she has little or no chance of leaving harbour without encountering a British cruiser.

So ends ingloriously the great Commerce War from which Germany at one time hoped so much. Though immature, to the extent that the number of ships participating was less than had been hoped, it was conducted with a skill, thoroughness, and forethought beyond reproach. Supply ships were everywhere, and the means of conveying information were remarkable. Retiring to unknown bases was brought to a fine art. But out of it all only about sixty merchant ships were accounted for, at a cost which one way and another must have equalled the damage done. Mahan's dictum as to the folly of commerce warfare has been fully borne out.

In concluding remarks on this phase of the war, a passing reference may be made to the statement that the *Eitel Friedrich* had run out of 8.2 ammunition, and interned herself because this was unprocurable in America. So large a gun sounds very improbable for a merchant ship, but it is worth recording, that before the war there were plenty of circumstantial statements as to German liners being fitted to mount such guns. How and in what way the *Eitel Friedrich* used up her heavy ammunition has not transpired. So far as is known, she sank very few merchant ships, and that cannot have consumed much in the way of projectiles, even supposing them to have been used. Probably British naval activities prevented her from ever obtaining her necessary supplies of ammunition. The mounting of 8.2's would suggest an intention to render armed liners capable of decisive action not only against British armed liners but also against small British cruisers.

ANSWERS TO CORRESPONDENTS.

D. C. T. (London, N.W.).—If a submarine has been rammed or fired at and oil is subsequently seen on the water, the assumption is that she has been disposed of, but this assumption is not necessarily invariably correct.

HIBERNICUS.—(1) Your scheme is not novel. (2) You may take it that the Admiralty knows what it is doing, and there is no reason to believe that the apparent waste of time is anything more than apparent.

E. N. B. (London, N.E.).—Arming merchantmen against privateers was a common practice in the old days. To be frank, I do not think that it would answer to-day against German submarines, except for the first time or two. The best safety for merchantmen is for several to travel in company, and even if one is submarined the odds are even that one of the survivors will ram the submarine. See, however, the legal point alluded to in the text.

IGNORAMUS.—(1) It is practically impossible for either side to lay a minefield without the other side coming to know of its location tolerably quickly. The chances of trapping a German submarine into a minefield are consequently small. (2) The same answer applies; the sea is too big a place for any entire closure to be possible. (3) It is not advisable to answer this question. (4) The first two answers explain why the idea, though ingenious, is somewhat outside the zone of practicability.

LANDLUBBER (Cork).—Unfortunately, German submarines possess an intelligence which is not shared with the whale! Everything else which you suggest has been tried since the war began, but the results achieved have been very slight.

C. M. (Dulverton).—I trust you will forgive my disagreeing with you, but I am afraid that the only chance of a merchant ship against a submarine is being able to ram her. You may take it for certain that if fired at, a hostile sub-

marine would instantly submerge and torpedo without further notice—probably without being seen, and in doing so she would be quite within her legal rights. I am endeavouring to deal with this very complicated question in the text, but you must understand that to a great extent we are faced with the unknown, and consequently, though suitable antidotes will eventually be evolved, they can only be arrived at by trial and error.

C. M. (Cheltenham).—A submarine attacking a merchant ship would fire the torpedo at the ship's broadside, and so the bow defence would be of no avail.

E. M. B. (Hove).—(1) The idea that German submarines are superior to ours is entirely incorrect. The latest German boats are very good, but so also are our latest boats. The rest of your question about submarines was dealt with in last week's article, which appeared a day or two after your letter was received. (2) This question is better not answered. You may take it that our Garrison Artillery know what they are doing.

H. E. C. (Ealing).—The "decoy duck" is an idea which in some form or other is as old as naval warfare itself.

J. R. B. (Manchester).—Your invention, or what is substantially the same thing, was anticipated by David Bushnell in America in the year 1773.

C. P. S. (Bath).—The scheme you suggest has been in use ever since the war began.

J. W. M. (Earlscolne).—See answers to "H. E. C." and "C. P. S."

T. B. (Bizerta).—There is nothing novel in the suggestion of your French friend.

M. N. O. (London, S.E.).—(1) Whether or not it is wiser for a merchant ship to go for a submarine or to attempt to evade her by a zig-zag course must depend upon a variety

of circumstances and the judgment of the captain of the merchant ship. It is impossible for anyone to lay down a general rule to be followed in all circumstances. (2) An elephant gun against a submarine would be little more effective than a pea-shooter.

E. S. (Frome).—See first sentence of reply to "Land-lubber" above.

C. T. (London, W.).—You may depend upon it that the Admiralty is fully alive to the submarine menace. The arming of merchant ships is a moot point to some extent, for reasons that are dealt with in the text. All through this war the situation has been more serious than the public elects to believe.

A. H. A. (Schatzalp-Davos, Switzerland).—(1) It is not to the public interest to make any statement whatever as to new warships that the Admiralty may have in hand. (2) A similar answer applies. The enemy is equally curious on the same subject. (3) I think you may safely put the alleged German apparatus for enabling submarines to look about them under the water in the same category as the inventions of the late Baron Munchausen. The German story is not even original, as some years ago an Italian inventor floated, or attempted to float, a company with a submarine which was to cruise at great depths and discover hidden treasure with a powerful searchlight. But even he did not go to the length of claiming to see through a brick wall, which is about what the German claim amounts to.

I. S. A. (London, E.C.).—You will see that I have endeavoured to deal with the legal poser which you raise in the text of this issue.

INQUIRER.—You are mistaken. The German shooting at the Falkland Island action was, in the circumstances, uncommonly good.

INFLUENCE OF AIR POWER.—IV. THE AERIAL DILEMMA.

By L. BLIN DESBLEDS.

WITH few exceptions, arising from very special circumstances, victory for a naval country has always been the result of the assistance given by her navy to her land forces. A navy has, by itself, hardly ever won a campaign; but, on the other hand, many a war would not have been a victorious one to a naval country had it not been for the influence and pressure of her sea-power. History, therefore, emphasises the value of co-operation between the army and the navy of a country. This is not, however, its only lesson. A closer examination of the contributions of armies and of navies of the past to final victories shows that, besides the co-operation of the two Services, there must also be the individual independence of each.

These teachings of history are very valuable as a guide in the development of air power, whose influence upon the destinies of nations is now at its dawn. But for the fact that there is associated with air fleets a distinctive military feature which is not a characteristic of naval forces, it would be possible to adapt, bodily, all the teachings of the history of navies to the rising air power—a power which can already exercise a direct, as well as an indirect, influence on the destinies of nations. There is, therefore, a parallelism between air and sea power. But, unlike navies, air fleets can remain in continuous touch with any operating army, and, before many years are over, they will, no doubt, be in a similar position as regards high sea fleets. This capability of air fleets, which can be, and, to a certain degree already has been, made of great military value to both armies and navies, is the reason why the entire teachings of naval history cannot be grafted on to the growing air power. Whereas a navy always exercises its influence, whether direct or indirect, by the power which it possesses as a separate and independent Service, an air fleet cannot give the best possible assistance to the force with which it is operating if it be independent of that force. The indirect influence of sea power demands co-operation, whilst the indirect influence of air power necessitates co-ordination, and, to a certain degree, subordination. The soundness of this assertion will be fully grasped by considering some examples of the respective indirect influence of sea and of air power.

When a navy employs a part of its organisation for the transport of troops, or of ammunition, or of supplies to any

desired place, or when it uses its influence to permit of such transport being made by merchant vessels, it exercises its force only in an indirect manner. The sea power is then used to assist the land forces, and the navy simply co-operates with the army. When the army has received a sufficient supply of men, arms, ammunition, and supplies, it carries on the war on land according to its own plans and independently of the navy. It is true that it may be required of the navy to see that the expeditionary force is continuously supplied with all its necessaries. This, however, does not alter the relative position of the army and of the navy. It only makes their co-operation a continuous one for a specific purpose, and there is no need, on that account, to place the navy under the authority of the Commander of the expeditionary forces. In fact, such a subordination would be inadvisable, and the necessary arrangements for an efficient co-operation between the army and the navy are, in consequence, entirely left to the authorities in office.

An air fleet, on the other hand, can produce an important indirect influence only if its work is co-ordinated with that of the force with which it is co-operating, and if that co-ordination is made on the spot as and when circumstances demand. This is due to the nature of the assistance which aircraft can render to a land or to a sea force. It is obvious, for instance, that it must rest with the commander of a force whether, on a particular day, or in particular circumstances, he would use his aircraft for reconnaissance in conjunction with the cavalry or for the purpose of assisting the artillery, or for any other suitable work. When an air squadron is co-operating with cavalry, the assistance which it can render to that force is, of course, of a different nature to that which it can give by co-operating with another arm, the artillery, for instance. Neither does it follow that, both as regards machines and personnel, the air squadron best suited for co-operating with the cavalry is also the best one to be employed for assisting the artillery; but neither of them may be the best for dealing with hostile air squadrons trying to prevent such co-operation. That certain air squadrons are specially suited to perform certain duties is a feature which, to some degree, is also to be found in the navy. But there is this difference between the co-operation of sea and air power with the land force, that whereas the former, from the nature of its work, as exemplified above, always exercises its influence, however

indirect, as a *Service*, the latter must, for the maximum efficiency, be used as an *Arm*. Considered as such, an air fleet must, therefore, be subordinated to the commander of the force with which it is operating, whether it be a land or a sea force. An aerial squadron may be a cavalry arm, or an artillery arm, or a naval arm. In days to come both navies and armies will, no doubt, be provided with air squadrons, specially equipped and manned, for these three, and very likely for other purposes. A study, therefore—even such an incomplete one as is being made in these Notes on the Influence of Air Power—shows that, in order to derive the fullest advantage of the indirect influence of air power, it is necessary to subordinate the work of air fleets to that of the various arms they may be employed to assist. But, in the present war, on account of the fact that the aerial arm is being seriously employed for the first time, it has not been found possible to give the amount of co-ordination and subordination which is necessary for maximum efficiency. The present campaign has witnessed an improvised utilisation of the new arm, and in that improvisation Great Britain has shown adaptability to such an extent that she has acquired, over her opponents, an ascendancy of the greatest value.

Such direct influence of air power, however, as would result from aerial attacks, aerial bombardments, and other offensive operations can only be obtained by the organisation of aerial forces as a *Service*, with the same liberty for independent action as is enjoyed to-day by navies.

The primal difference that exists between naval and aerial power is the following: A navy exercises its maximum direct, as well as its maximum indirect, influence by being an independent *Service*, whereas an aerial force exercises its greatest indirect influence by being considered as a supple-

mentary arm, and *would* exercise its maximum direct influence were it, like the Army and the Navy, an independent *Service*.

Previous to this war the lack of knowledge and experience with regard to the military capability of aircraft led to a very crude system of dividing service aeronautics into (i.) military and (ii.) naval aeronautics. Now, experience in the employment of aircraft in actual warfare demands the more scientific and truer division of: (i.) *Service*, (ii.) *Arm*. This latter would itself be subdivided into (a) the military aerial arm and (b) the naval aerial arm. The present organisation of aerial forces does not permit the fullest advantage being taken of the direct as well as of the indirect influence of air power, because an aerial force is, at present, a hybrid which has to perform both the duties of an arm and those of a *Service*. In consequence there arises an aerial dilemma of great interest, to which attention has already been drawn in the previous article on the Influence of Air Power. This dilemma is the following: Shall a commander look upon his air fleet as a *service* and employ it to exert direct influence, in which case he would have to forgo the advantages resulting from the co-ordination of his aircraft with the other arms, or shall he employ his aerial force as an *arm* to exert the indirect influence of air power, in which case he would have to renounce the possible effect of the direct influence of air power? No solution has yet been offered to this aerial dilemma now facing commanders, who have had, therefore, to content themselves with a compromise, the result of this compromise being that the only effort to use the direct influence of air power has been the carrying out of a number of timid raids. But to this dilemma, as far as it concerns Great Britain, the writer hopes to be able to offer a solution in his next article.

CORRESPONDENCE.

ANTI-SUBMARINE TACTICS.

To the Editor of LAND AND WATER.

SIR,—My letter, which you published a few weeks ago, has resulted in an interesting discussion on the subject of anti-submarine tactics. Your two correspondents have described the types of submarine chasers which they recommend, and, from their technical knowledge, as naval architects, their views on the various points at issue are evidently valuable. There is, however, one important point which I raised in my letter, which neither "J. R." nor "J. D. C." has referred to—viz., the desirability of attacking the submarine by the method of ramming. Both your correspondents, apparently, rely for their offensive entirely on the gun and the torpedo. Either of these weapons would doubtless be effective against a submarine on the surface, but I fail to see how they could be used with advantage against a submerged submarine, the periscope only being visible above the surface of the water. I presume that the only objection to endowing a submarine chaser with ramming power is that she would have to be more strongly constructed, and that consequently she would have less speed for a given length of water-line—in other words, she must be a longer and larger boat for a given rate of speed.

All these points, however, must clearly be left in the hands of the Admiralty, who, of course, will consult commanders of our own submarines and commanders of those destroyers who have had opportunities of attacking the enemy's submarines. What we want is that the Admiralty should build as quickly as possible, and if they are uncertain as to the best type of boat, that they should build a few boats of different types. For instance, they might build a few boats designed to ram, with a speed of 20 to 24 knots, and a few others of lighter construction with a speed of 28 to 30 knots.—Yours faithfully,

DUNLEATH.

GUN EMPLACEMENTS.

To the Editor of LAND AND WATER.

SIR,—I have read somewhere that there may be a difficulty in providing emplacements for guns as our troops advance, owing to the time it takes for ordinary concrete to set or become solid.

A quick-setting cement is probably known to the authorities, but in case it is not, I would inform you that such a cement exists in a mixture of magnesite and magnesium chloride.

I have never used this cement to make a concrete, but have used it as a quick-setting mortar. I may say that

within twelve hours this mortar becomes as hard as ordinary Portland cement mortar does in three or four days.

I do not ask for any acknowledgment of this in your columns, but in case any further information is desired on this subject I am willing to give it.—Yours faithfully,

FRANCIS DRAKE.

Mining and Metallurgical Club, London Wall Buildings,
London Wall, London, E.C.

WAR LECTURES.

Many additional inquiries with regard to the LAND AND WATER lecture scheme have been received by Queen Alexandra's Field Force Fund as a result of our recent article. Arrangements are being made for lectures well into May, and there is still ample time to fix up dates before the season is over for indoor meetings.

Both as a means of patriotic propaganda and as practical aid to the fund that supplies, on properly organised lines, the comforts so urgently needed by our soldiers in France, the scheme has proved a gratifying success.

Clergymen, members of political bodies, and public men generally are earnestly invited to write for particulars and texts of the lectures to the hon. secretary, Queen Alexandra's Field Force Fund, 24A, Hill Street, Knightsbridge, London, S.W.

SMALL FIRMS.

We have received a letter from a firm of aeronautical engineers who would like to get in touch with some of the small firms whose plant at the present time is idle. If the principals of these firms will kindly communicate with the Editor of LAND AND WATER he will put them in communication with the correspondent. Envelopes should be marked "Small Firms."

MR. HILAIRE BELLOC'S WAR LECTURES.

Preston.....	Town Hall.....	Wednesday.....	28 April, 3 & 8.
Blackpool.....	Winter Gardens.....	Thursday.....	29 April, 3.30 & 8.
Liverpool.....	Philharmonic Hall...	Friday.....	30 April, 8.30.
Liverpool.....	Philharmonic Hall...	Saturday.....	1 May, 3.
London.....	Queen's Hall.....	Wednesday.....	5 May, 8.30.

MR. FRED T. JANE ON THE NAVAL WAR.

Sheffield.....	Victoria Hall.....	Friday.....	16 April, 8.
Harrogate.....	Kursaal.....	Saturday.....	17 April, 3.30.
Blackpool.....	Winter Gardens.....	Monday.....	19 April, 8.
Liverpool.....	Philharmonic Hall...	Tuesday.....	20 April, 8.
Southport.....	Cambridge Hall.....	Wednesday.....	21 April, 8.
Buxton.....	Opera House.....	Thursday.....	22 April, 3.
Manchester.....	Free Trade Hall.....	Friday.....	23 April, 8.
Scarborough.....	Opera House.....	Saturday.....	24 April, 3.

MR. CRAWFORD PRICE ON "SERBIA."

Southport.....	Cambridge Hall.....	Friday.....	16 April, 8.
Torquay.....	Pavilion.....	Wednesday.....	21 April, 3.
Weymouth.....	Barden Rooms.....	Thursday.....	22 April, 8.
Bournemouth....	Winter Gardens....	Friday.....	23 April, 3 & 8.

OUR AMBULANCE APPEAL.

By **ATHERTON FLEMING.**

AS we go to press the total amount of subscriptions received is £621 17s. 3d., a figure which is very satisfactory indeed. An order has been placed for a chassis, to cost £430, and it is estimated that the cost of the body—which is being built to the design of Mr. Amos, the consulting engineer to the Hector Munro Ambulance Corps—will be about £60. Mr. Amos is intimately acquainted with the many and varied requirements of a thoroughly efficient motor-ambulance, and many fittings will be added which Dr. Munro's experience at the front has shown to be necessary. A great deal of trouble has been experienced in procuring a chassis for almost immediate delivery, but we have been fortunate in obtaining the co-operation of the Napier Co., who are doing their best to obtain an exemption order from the War Office, and may be able to deliver in about a fortnight or three weeks. In the meantime, the body is being built, and, under favourable circumstances, the complete ambulance ought to be handed over to Dr. Munro within one month.

One of the most interesting letters I have received in connection with the fund is reprinted hereunder, and I wish to assure the writer that his subscription is none the less welcome because of its size, and that it is sincerely hoped that when our ambulance goes on active service, it will help in some little way to alleviate the sufferings of many of the brave Belgian

soldiery, and then the purpose of our fund has been achieved.

16, Buckingham Palace Gardens,
London, W.,

March 30, 1915.

SIR,—I learnt with much pleasure that your estimable magazine has opened a subscription to provide the Belgian Army with a new ambulance car. I am glad to send you my small offering, knowing so well what it means to be without sufficient help for the wounded, since I was myself lying a whole day helpless on the battlefield. Notwithstanding their heroism and devotion, the stretcher-bearers—who had to carry the wounded right back to the ambulance train—were forced to leave hundreds of them exposed to the cross-fires of friend and foe. This is the most terrible experience that a soldier can be called upon to suffer, the *only* remedy for which is a well-equipped service of motor-ambulances.

I am sure that all Belgian soldiers will feel deeply grateful to you for your great kindness in opening this subscription list.—I am, Sir, yours faithfully,

G. VAN VUFFEL,

Sergent-Reformé du 2e de Ligne Belge.

P.S.—I hope you will be able to read this badly-written letter, but, since I have lost the use of my right hand, I have to write with my left one.

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Mr. and Mrs. Hugh Maxwell	0	10	0	Mrs. Farley	0	5	0	Mrs. Strange	0	2	0
Mrs. A. E. Nicholson	0	10	0	Anonymous (Stirling)	0	5	0	Miss M. F. Brownjohn	0	2	0
Mr. Hughlings Davies	0	10	0	Mr. E. Bennett	0	5	0	Anonymous	0	2	0
Mrs. Eva M. Mellersh	0	10	0	Mr. T. Wood	0	5	0	Miss Thurza Searson	0	2	0
Dr. W. Bevan-Lewis	0	10	0	Miss Ritchie	0	5	0	Mrs. Graham White	0	2	0
Mr. G. W. Orr	0	10	0	Miss Henderson	0	5	0	Mrs. Hardress Chaplin	0	1	0
"L. and F."	0	10	0	Mr. A. C. Dutton	0	5	0	Mrs. A. J. Prosser	0	1	0
"W. J. R."	0	10	0	"Rifleman"	0	5	0	Mrs. C. A. Bailly	0	1	0
Mrs. F. Schwabe	0	10	0	Miss F. Wallas	0	5	0	"E. M. L."	0	1	0
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"I. M. I."	0	5	0	Mr. D. S. Mackenzie	0	2	6	Miss E. Rhind	0	1	0
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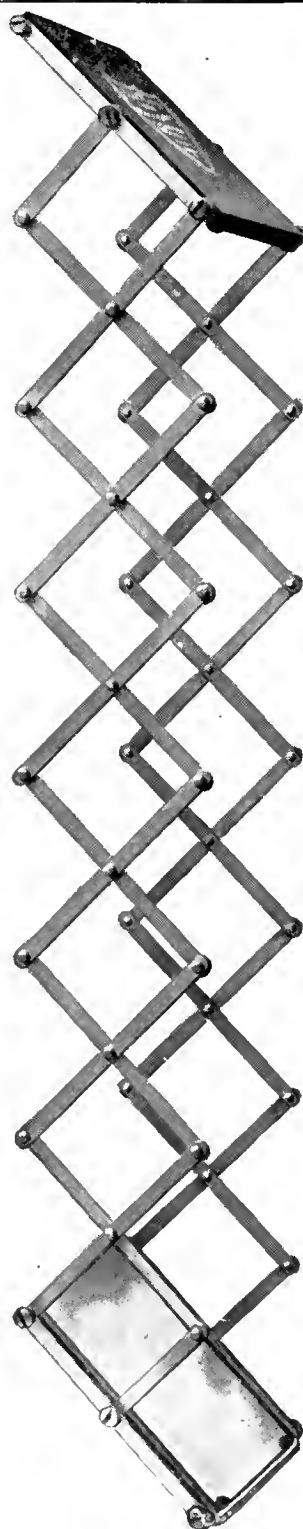
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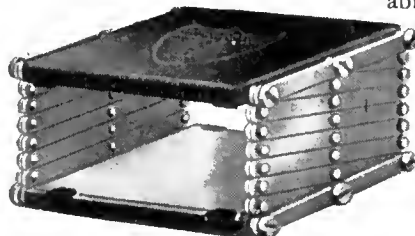
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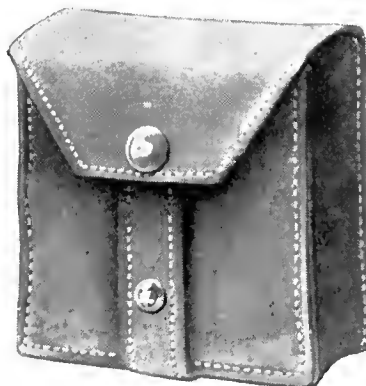
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MONTHLY LITERARY REVIEW

By R. A. SCOTT-JAMES

MR. JOSEPH CONRAD has conferred this immeasurable boon upon us; he, a Pole, with the temperament, instinct, and antecedents of a Slav, has written great Slavonic literature for us (Slavonic, that is, in all but language and subject-matter); he has written it for us in our language, at its best, in terms of things and images that we know, thus naturalising amongst us not only himself, but a classic example of literature Slavonic in temper, inspiration, and method. His new book contains four short stories:—

"Within the Tides: Tales." By Joseph Conrad. (Dent.) 6s.

These tales, being slighter, have not the all-compelling, concentrated force of the three stories in "Youth," and in personal interest they fall short of "Twixt Land and Sea." Nevertheless, all but the first of the four are as good as they could be, for the point is made, the effect attained, the thrill, the horror, the mocking tragedy is achieved. And the first story only falls short in that the author is long in getting to the business. The gist of the tale is all in the concluding sections, when the explorer brings the girl, her father, and her aunt to his island, knowing that the long-lost, mediocre youth—whom the girl has idealised and sought—lies dead there. He, the explorer, inflamed by this lovely, reserved, conventional girl, deeming himself worthy of her, and knowing the worthlessness of the youth whom she seeks, confronts her with the other's grave and his own passion; and sees her "in the pose of simple grief—mourning for herself," conventionally "surprised" at his passion, and offended. "I had nothing to offer to her vanity." Certainly Mr. Conrad abhors an anti-climax.

In the other stories we are *in* the affair from the start. One tells of how an old ship was wrecked for the sake of the insurance money, and how grimly everything went awry. Another is a gruesome story of 1813, the scene an inn in a desolate region in Spain, where an English naval officer discovers his comrade's body in a wardrobe, and escapes from the horrid contrivance by which the other had been done to death. The fourth defies description in a sentence; we are back again in the Eastern atmosphere of "Almayer's Folly"; but Mr. Conrad has grown more cynical, and the "good" man who has saved his cargo and his life from treacherous assassins, is brought home to a wife green with jealousy.

I have often heard it said that for Mr. Conrad "the tale is the thing"; he is just a teller of tales. In a sense he is. The plot, the situation, the climax, are all-important. But his tales are much more than narratives. Everyone knows that a good ghost story is nothing if it does not produce the "feel" of the ghost and the horror itself. What the teller of good ghost stories does with the uncanny Mr. Conrad can do for the more varied and far more subtle realities of life. The persons are real and complex, the situation is tense, dramatic, charged with emotion, and the scenery enters into the drama and becomes a part of its life. What matters in a tale is not the bare incidents, however ingeniously contrived, but how you conceive them, imagine them, present them to yourself in terms of life and feeling. In the long run it is Mr. Conrad's personality that matters; by mastery of language his imagination dominates the plot.

"The Invisible Event." By J. D. Beresford. (Sidgwick & Jackson.) 6s.

Just before I read this book I was examining the preface to "Fanny's First Play" (now published by Constable, 1s. 6d. net), and found Mr. Shaw reiterating: "Is it any wonder that I am driven to offer to young people in our suburbs the desperate advice: Do something that will get you into trouble?" I do not intend to discuss "Fanny's First Play" in these columns; it was sufficiently discussed when the play was produced four years ago. But Mr. Shaw has set the problem: How to "combine loss of respectability" (respectability being in his opinion the besetting sin of our age) "with integrity of self-respect and reasonable consideration for other people's feelings and interests?" It may seem surprising that such a novelist as Mr. Beresford, who has ten times as much interest in human nature as Mr. Shaw has, ten times the capacity to make characters real and alive, should yet be so hypnotised by his *ideas* as

to let these ready-made problems dominate his novels. However, the problem is not everything. Mr. Beresford may have used the fashionable situation, but his characters are all his own, they work out their destinies in *his* way, and this book is a powerful conclusion to the trilogy which began with "The Early History of Jacob Stahl."

The novel opens abruptly at the point where Stahl is completely convinced that he cannot do anything in life without Betty Gale. Marriage is impossible, for a wife from whom he had been long separated is still living, and refuses to divorce him. To Stahl the situation presents no difficulties; he needs Betty, she needs him; the ceremony of marriage is a ritual binding only those who fear public opinion. But Betty *does* fear public opinion. She shrinks from the hostility of her selfish relatives at the Rectory; she shrinks even from the horror of old Mrs. Parmenter, whose partner she is in running a boarding establishment. "I hate to see dead people walking about," says Mr. Shaw. "To Jacob she (Mrs. Parmenter) appeared as a dying woman, to Betty as the representative of public opinion."

Betty does run away with Stahl, and joins him in a cottage in Cornwall. But her difficulties are not at an end. She had not merely feared public opinion; her conscience confirmed her fears. It is here that Mr. Beresford breaks away entirely from Mr. Shaw. Stahl argues; but argument is nothing to Betty. "I shall be all right if you'll only let me alone," she says, evading the earnest arguments that to her "wore an air of sophistry."

"Well," *you* are coming round to my point of view, anyway," he says.

"I've got to, if I'm to have any peace of mind," said Betty, pointing the essential he had overlooked.

Betty Gale is a character whom the reader will not easily forget—strong, active, impulsive, honest, lovable. The personality of Stahl, too, is drawn with great power; and Mr. Beresford is equally skilful in living in the characters of the selfish, respectable people who are such poor supports, and Betty's wavering conscience. Mr. Beresford is one of the most interesting, suggestive, and impressive novelists now writing, and his book is a rare example of fine, animate, stimulating fiction.

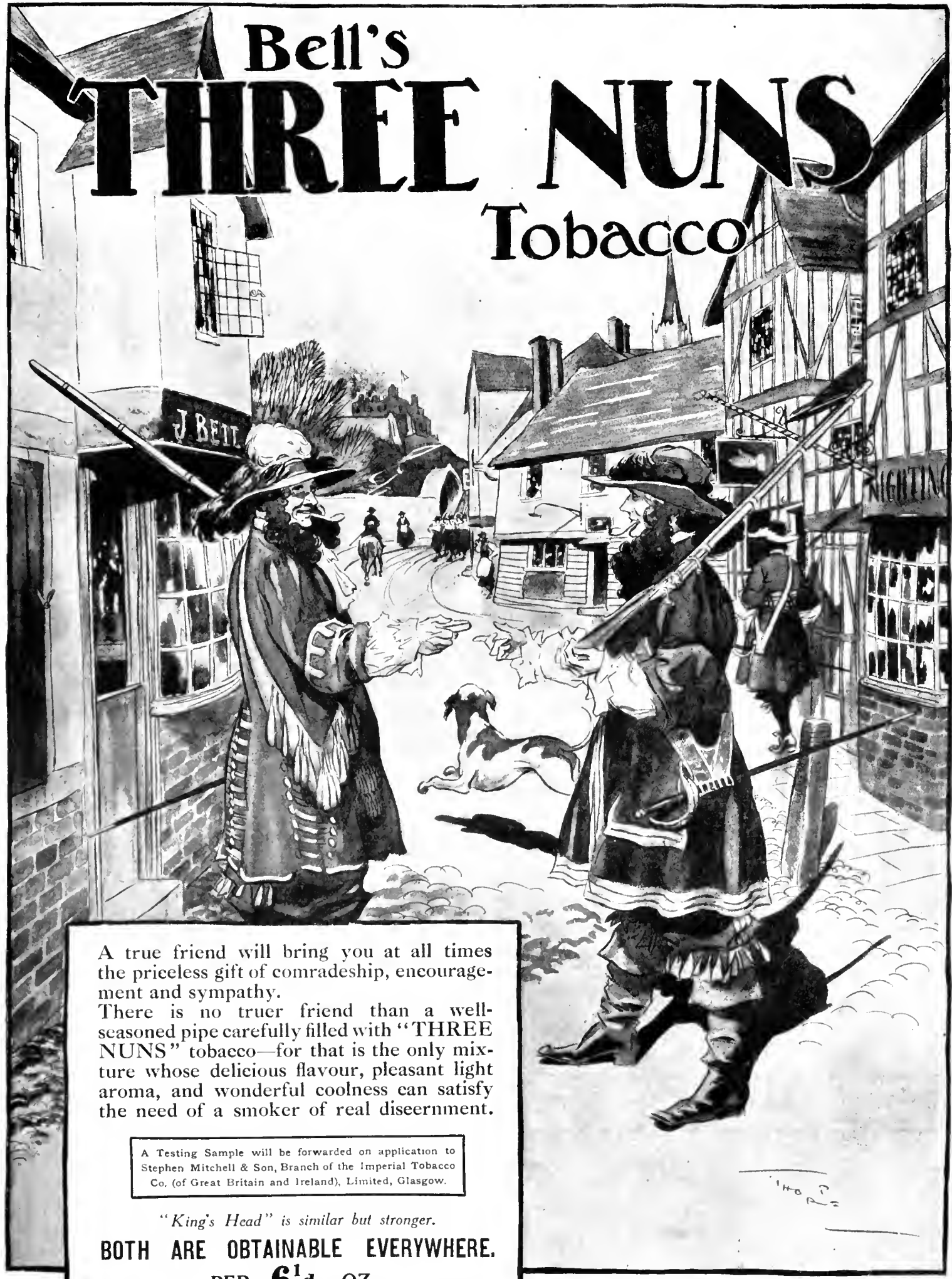
"Peter Paragon: A Tale of Youth." By John Palmer. (Secker.) 6s.

We have hitherto known Mr. Palmer as a clever, incisive, discriminating critic of literature and drama, and in this first novel he shows that he can be no less skilful as a critic of life. "Skilful," perhaps, is the word that first comes to the lips—the sentences and the chapters are so neatly trimmed, the whole story arranged with exquisite precision. But he has not refined away the flesh and blood in the process. Peter Paragon is a kind of diminutive Faust, and he shares that quality with so many modern heroes of fiction! They are nearly all little Fausts, plumbing the depths of experience in their cradles, at school, at the university, in London, and at length in some happier Margaret's arms. Peter plumbs and plumbs all these little depths. But, to be fair to Peter, he is a nice boy at school, and in love with Miranda; he is a really spirited, live, original undergraduate at Oxford (in an Oxford far more real than "Verdant Green's," more interesting even than Mr. Compton Mackenzie's); he is an eager, masculine adventurer in the adult cosmopolis; and Miranda, at the best, is not merely Miranda, but an eternal ideal. Mr. Palmer stands out head and shoulders above the other dozens of creators of Peters homunculi.

THE "NINETEENTH CENTURY"

THE April number of the "Nineteenth Century" contains a very timely article by Sir Harry Johnston. There are few persons who understand African administration as Sir Harry understands it, and in the past none could have accused him of being an anti-German. But he is now urging strongly the necessity of capturing and holding the German African colonies, and of refusing to restore them after the War. Dr. S. T. Pruen's article, "What the Germans did in East Africa," gives a few illuminating facts in this connection. In the same number of the Review Sir Francis Piggott discusses neutral trading and the acute questions involved in it; M. Emile Vandervelde contributes an important article (in French) on the Belgium of To-day and the Belgium of To-morrow. An exceptionally interesting contribution is that from Mr. Havelock Ellis on "Richard Graves and 'the Spiritual Quixote.'"

MESSRS. JARROLD & SONS have supplied a much felt want in their weekly publication "Foreign Opinion," the first issue of which appeared the latter end of March. It is valuable to be able to read the various opinions by well-known foreign writers as to the different phases of the war and of the various attitudes with which it is regarded when looked at through foreign eyes. The first number contains articles by Von der Goltz, Max Lenz, Theodore Woolsey, Gabriel Hanotaux, Count Reventlow, and Ramiro de Maeztu. A feature of the number is the "Comment and Caricature."



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SATURDAY, APRIL 24, 1915

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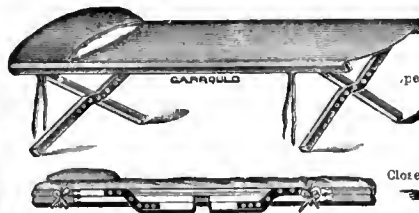
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THROUGH THE EYES OF A WOMAN

By MRS. ERIC DE RIDDER.

Women in Congress

A PROPOSAL has recently been made, which has set many people a-talking. It is suggested that a Conference of Women should take place at the Hague, before many more days have elapsed. It will deal with the question of peace. Women from many countries are to be there. Women from England, Germany, Austria-Hungary, Belgium, and various neutral countries. There will be no Frenchwomen, for the simple reason that the women of France have flatly refused to have anything to do with the idea. They will not even consider the notion of meeting women from Germany at present. It is a suggestion they cannot tolerate. The feeling in France runs far too high for that. Her sufferings are too great, and the knowledge of the German menace too sore.

Various Opinions

Opinion is by no means unanimous in England. There seems, indeed, a great depth of feeling about it, and not only criticism, but controversy is rife. The women, however, who have made up their minds that it is the right thing to go have probably made up their minds to face a vast amount of criticism also. That, they no doubt recognise, is inevitable. The first movement connecting women and peace came from America in the very early stages of the war. A great demonstration of women took place to protest against the senseless destruction and barbarity of war. From all accounts it was a very fine proceeding, and made a great impression upon the mind of everyone who saw it. It was the outcry of woman as wife, and woman as mother, against this ruthless slaying of men, and the smashing of homes and lives. The American woman can look at the question from a more or less unbiassed point of view. Circumstances aid her to be an impartial critic, and she can regard the question as a whole, and free from personal feelings. American women have come to the conclusion that war is the most destructive enemy that woman can have. Valuable though it is to both, they yet consider that peace is infinitely more valuable to women than to men. It is almost impossible not to wonder whether the women at the Hague can meet under calm conditions as the Americans did. If women of enemy countries can discuss burning questions without heat and without bitterness, it must surely approach a miracle. One glance at the names of those who will act in the English deputation must convince everybody that the task has not been lightly undertaken. It is to be carried out by those who only act from fixed convictions, and whose opinions have long been quoted. Lord Robert Cecil's criticism of the proposal is that it is premature, and with this many will agree. When peace is in sight a women's congress is bound to be infinitely more satisfactory than it could possibly be at the present moment. Then it can be of immense importance.

The Belgian Soldiers' Fund

Just behind the "Times Book Club" a wonderful work is being carried out. It is known as the Belgian Soldiers' Fund, and the object is to provide comforts for Belgian soldiers on active service. The address of the Fund is 17-19, James Street, Oxford Street, and the premises can be easily recognised, because a large Belgian flag is flying from them. The Belgian Soldiers' Fund sends out a great number of cases and bales to the Belgian Army on Monday of every week. These packages are shipped to Dunkerque, and the shipping

is easy and prompt, because it has the advantage of a free pass from the Admiralty, and the packages are met the other end by Belgian officials. This, indeed, is one of the chief points about the Fund. Not only has it the support and gratitude of every member of the Belgian Government, from the King and Prime Minister downwards, but it has the approval of our own War Office and Admiralty as well. The working of the Fund is one of complete harmony. It is a triumph of sound,

common sense organisation. All that is wanted is sufficient support. The briefest review of the object for which it exists will serve—it is indeed all that is possible here.

The Friend in Need

Everyone who has given the matter a moment's thought knows that the words "our debt to Belgium" are no mere formula. It is the clearest of realities. The debt we owe Belgium is an immense one, the seven days she gained for us of such vast value, that it cannot be reckoned in words. The best way in which we can show our gratitude is by deeds. The Belgian Soldiers' Fund is the means through which we can act. The keynote of this Fund is one of friendship. People in England are asked to befriend the Belgian soldiers who have borne and suffered so much during the last few months. The catastrophe which has overtaken Belgium has resulted in families being parted and divided, and many a soldier in the Belgian Army to-day has not the smallest idea where his wife and family are. As a consequence he has no one to send him those comforts which hearten him, and mean so much to his well-being. Through the good services of the Fund, many people are sending gifts to the Belgian soldier, but more friends are ever wanted. The cases and bales sent out by the Fund



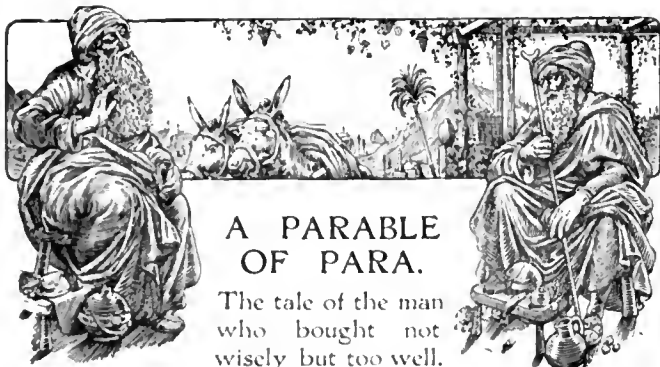
Copyright, Madame Lallie Charles THE COUNTESS OF LISBURN.

Who is the wife of one of the newly-appointed officers in the Welsh Guards, Lord Lisburne having been just gazetted amongst the lieutenants. Lady Lisburne is the daughter of Don Julio de Bittencourt, of the Chilean Embassy

contain articles of food and clothing. If people send money instead of gifts in kind, articles are bought at wholesale prices by an experienced buyer. The demands upon everybody's purse are heavy in these days, but the Fund makes no big requests. It is grateful for the gift of one pound of sugar or rice weekly. It is the regular weekly gift—however small—that is most appreciated, because then there is a working knowledge of the probable amount that can be dispatched week by week.

Pure Water for Belgium

The Belgian Army appreciate so warmly the packages from James Street, that the various commanding officers draw up lists of their special requirements, and forward them to Dunkerque. During the past month a tremendous success has been scored by the portable field kitchens, which, under the Fund's direction, have been conveying soup and coffee to the Belgian troops. Though they carry fifty gallons, they are so light that they can pass over many a shell-torn road, which could not be crossed by heavier traffic. The great problem in front of Belgium is the water supply. The floods have made burying of dead men and animals an impossibility; when they subside and the present mud turns into dust, the conditions in Belgium will be indescribable. It is proposed to raise a force of 150 field kitchens, each of which will carry fifty gallons of sterilised water. What this will mean to the Belgian Army no tongue can tell. By their aid the nightmare of typhus that threatens Belgium as fully as Serbia will be laid. Every penny that can be spared should find its way to the Pure Water Fund, full particulars of which will always be forwarded on request from James Street, though the worth of the work almost speaks for itself.



A PARABLE OF PARA.

The tale of the man who bought not wisely but too well.

CHAPTER THE SIXTH.

AND when they had eaten, the wise man said, "Thou seest the condition of my beast's shoes. Innumerable journeys have I undertaken since last I shod him. And note well, their first life is not their last, for when thou comest to shoe thy beast again, this shoe can be re-fashioned in such a manner that thou hast a new shoe and naught but a few pieces to pay. But have a care that thou sufferest none but the makers to work their will upon it, or thou wilt be sore disappointed. The price? What payest thou for thine own foot-wear? They are from Hassan's shop methinks; not dear nor cheap; a fair price and full value. Is it not so? Well, here also thou obtainest full measure, and art well treated. No hucksterers are they. Lastly, as a man possessing the finer sentiments, hast considered that this shoe is fashioned by men of our own race? What sayest thou? Of a surety I have reason, and one day thou wilt speak unto another even as I have spoken unto thee." (The end.)

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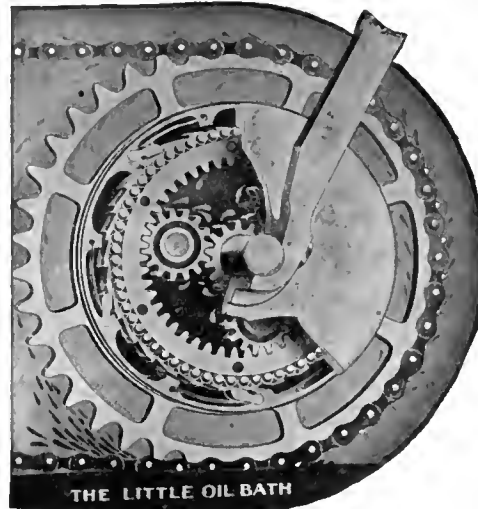
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tempts have often been made to imitate it, especially by Foreigners. The Sunbeam's abolition of cycle Friction is one of those Triumphs of British Workmanship of which this Country can indeed be proud. Ride a Sunbeam.

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THE WAR BY LAND.

By HILAIRE BELLOC.

NOTE.—This article has been submitted to the Press Bureau, which does not object to the publication as censored, and takes no responsibility for the correctness of the statements.

In accordance with the requirements of the Press Bureau, the positions of troops on Plans illustrating this Article must only be regarded as approximate, and no definite strength at any point is indicated.

THE news of the past week has been so slight that there is no particular commentary to be made (or at least none which would be useful to the general study of the war) upon the details.

I shall therefore take the opportunity, with my readers' leave, of considering as thoroughly as may be the problem presented by the Carpathian fighting.

There have indeed been a couple of points in the West which have excited interest in the French and English Press. The first is the capture of the hill marked "60 metres" on the Belgian ordnance map just south of Zillebeke by the British contingent. The second is the fact that the French have in the Vosges pushed forward upon one of the ridges of the lateral valley leading down upon the Alsatian plain north of the height captured a fortnight ago.

But neither of these local movements is more than typical of the initiative possessed along the whole line by the Allies in the West. There is nothing to be learned from them beyond what we already know—that, with sufficient preparation, the Allies can attack where they like, and that where they attack they will almost invariably draw upon the enemy a higher loss than he inflicts upon them.

The matter has been repeated so often in these columns that I do not labour it; but it is of the first importance to the understanding of that attrition which, though people are getting rather tired of the term, remains the foundation of military policy between the Swiss mountains and the North Sea. It may be summed up in these maxims. The attack is less expensive than the defence. This paradox depends upon the allied superiority in heavy artillery. That artillery is superior on account of superior airwork. In those three points you have the whole business, and there is no more to be said upon them until the moment shall come for putting them to the test upon a far larger scale.

In Northern Central Poland nothing has happened, and in the Carpathians themselves little more than the intensive actions confined to a few hundred yards which mark the slow advance of the Russian occupation from the crest.

But the general problem presented by the Carpathians will remain for some weeks a capital element in the campaign, and perhaps the chief element. It may even become the determining thing of the whole war.

It is therefore amply worth our while to pause in this lull and analyse the conditions of the front between the Dunajec and the frontiers of Roumania.

THE GENERAL CHARACTER OF A MOUNTAIN CHAIN AS AN OBSTACLE.

All obstacles to a strategic advance have this in common, that their characteristic is to impose delay.

Each type of obstacle, however, differs from the rest in the fashion whereby it must be surmounted and defended. Thus marsh involves the building of a causeway; a belt of sea is defended by a fleet and can only be surmounted by a fleet; a river is usually to be crossed anywhere when once the opportunity of throwing a bridge is acquired.

A range of mountains commonly presents a particular type, both in the methods of surmounting it, and in the methods of defending it, which give to the strategic problem connected with it a special character capable of definition and analysis; and one range differs from another according to the height, the breadth, the character of artificial communications across it, and so forth. As the Carpathian front has become for the moment the principal field of the war, I propose this week to describe the general character of a mountain chain as an obstacle, and next to analyse the particular conditions of the Carpathians.

A mountain chain opposes the rapid progress of an army in three ways, all inter-connected.

First, and least important, you have the mere fact of the slope. The attacking party has normally to advance up hill until the crest of the chain is acquired.

Second, and much more important, mountain districts are, by their forests and their crags, difficult of access save by certain well-determined avenues, commonly those of the main valleys, and these avenues are made accessible in various degrees by the artificial work of roads and railways.

Thirdly, a mountain chain is commonly a deserted territory, with few inhabitants, few towns, and, therefore, few opportunities for shelter and storage.

Certain consequences flow immediately from these three main characteristics. The most important is that frequent and good communications will be discovered in the Plain upon either side, and will usually grow rarer and rarer as the crest is approached. A consequence of this is that the defence of the chain becomes increasingly easy, and the attempt to cross it increasingly difficult as the belt of mountain country from foothills to foothills is traversed by the attack.

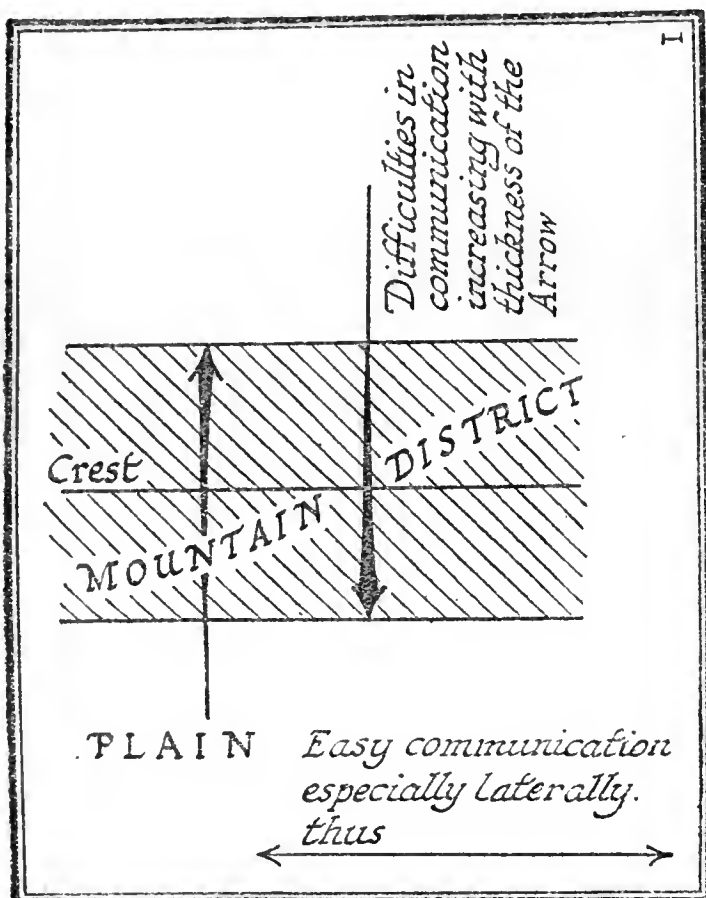
The problem, therefore, of mastering the obstacle of a mountain chain is by no means the problem of merely reaching its most deserted and highest portion, the crest, after which one may expect the task of the advance to become easier. Students sometimes fall into this error on the analogy of lesser elevations. If you are trying, for instance, to master a range of hills such as the Cotswolds, when you are in possession of the crest you have done your work. Supposing an army coming up from the Plain of Oxford along the gradual Eastern approach of the Cotswolds, and another army concerned to prevent their crossing this chain and appearing in the Plain of the Severn—the decisive fighting would take place on

the Eastern slope; and if the invading army carried the crest it would be impossible to defend the short, steep escarpment down on to the Severn Valley.

But with a great mountain range the distances involved are so considerable that this analogy does not apply.

With the crest already in one's hands, one still has a belt of territory at least a day's march broad, and usually much more, to pass before one is out of the wild country and free to use the numerous and easy communications.

Consequently, the real strain upon an army which is trying to force a belt of mountain territory comes at the *end* of its effort, so far as communications are concerned, and just as it is reaching the further plain it is putting the maximum strain upon its columns of supply.



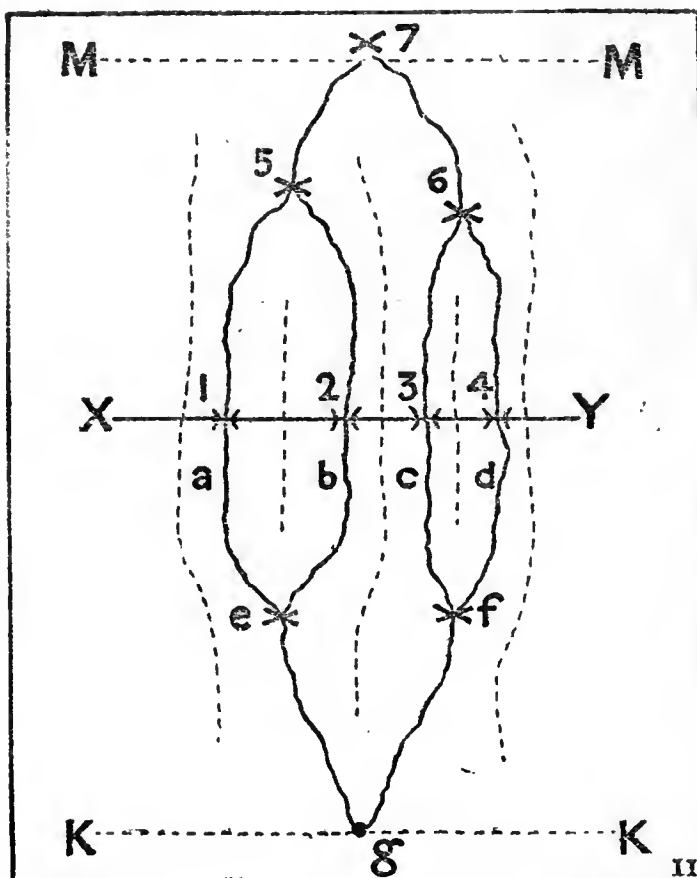
Next we must note that when once the Plains are reached the army reaching them has a very great advantage at once over his opponent. This advantage is not only due to the fact that once the obstacle has been surmounted, and once the "bridge heads," so to speak, have been established on the further side of it—that state of affairs applies to the successful crossing of any obstacle—the particular advantage given by the forcing of a mountain chain and arrival upon the plain beyond may be compared to bursting of water through a dam. So much effort and such numbers are required for the difficult passage (which, remember, can only necessarily be conducted by a large body upon a certain breadth of front), that if it is successful, by the time its effort reaches the plains the enemy is probably already beaten. This does not apply to the case of a deliberate retirement behind a mountain range on the part of the defence, when the defence feels itself unequal to the task of holding the hills; but it does apply to such a battle as this which is raging in the Carpathians on the Hungarian side. An army which shall have been forced down the

Hungarian slope on to the plains will hardly be in a posture to defend those plains against the masses that have been accumulated against it, and that have forced it from the hills.

This consideration, though it is very vague and general in its character, explains, I think, more than one of the successful irruptions over a mountain chain in history. At first blush it would seem as though the army in the plain had every advantage. It has good communications behind it, whereas the army coming across the mountain has bad communications. It has probably also shorter communications behind it. It can move large bodies with rapidity laterally, whereas the army that has only just arrived on the plains can only move small bodies laterally, and probably not with rapidity. It has destroyed or impeded the communications which it left behind, whereas it has kept intact the communications upon which it reposes.

From all these causes it would seem that the army which has been pressed back across the mountains should be in a better posture than the army which has forced the obstacle. But the historical cases which in practice prove the contrary, are so numerous that they call for an explanation, and I believe the explanation to be what I have said—that the effort to force such an obstacle being what it is, when it is successful has all the effect of the bursting of water through a dam, and, the plains being reached, the momentum of victory counts for more than all the rest.

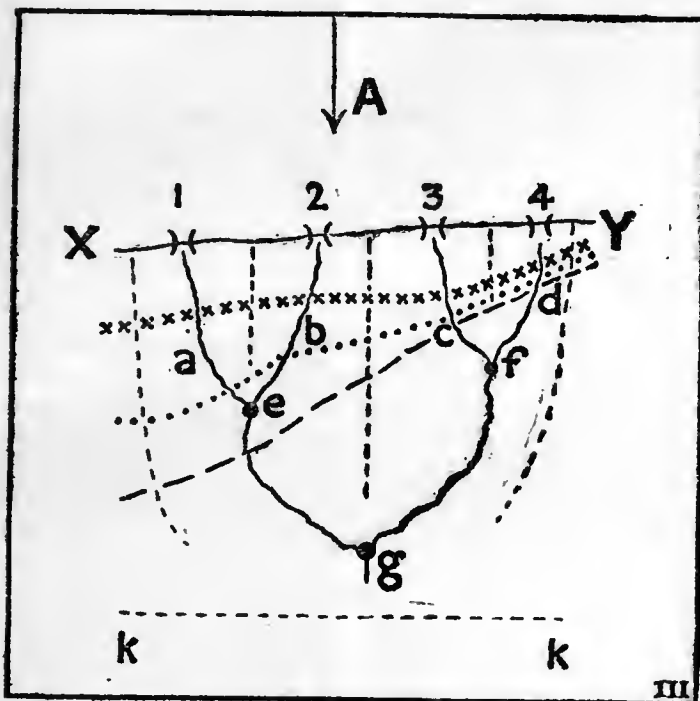
I repeat, however, that this does not apply to the case of the defensive voluntarily abandoning a belt of mountain district before a superior offensive which it thinks it is not able to meet. In this latter case the defensive, having fallen back on to the plains, is in a very good posture to meet the offensive proceeding from over the mountains. It compels that offensive to fight with an obstacle at its back, and that is always a handicap, and it has the advantages above enumerated which the plain can give.



THE PARTICULAR POINT OF THE LATERAL VALLEYS.

A mountain range nearly always has a particular character which renders the problem of offence and defence within its limits different from that of any other obstacle, and this character must be explained diagrammatically.

From the crest of a range of mountains X—Y (as shown on plan II.) there descend to the plain upon either side a system of valleys which usually run more or less perpendicular to the crest. Thus you will have on one side of X—Y the streams 1, 2, 3, 4, and on the other side the streams a, b, c, d. These streams will commonly run through deep gorges, and will be separated by difficult secondary ranges (represented by the dotted lines), across which it is very difficult to move men and material, and a line across which it is difficult to keep in touch.



The streams on either side especially mark the lines along which communication across the mountains is possible by road or by railway.

Now, as the streams proceed down towards the foot-hills they unite in larger streams and more open valleys as at the points 5—6, e—f, and later on these new main streams unite in their turn before reaching the plain, as at the points g and 7.

Now it is evident that an army forcing its way across the mountains from the plains at M—N towards the plains K—K, when it has reached the crest X—Y and passed the four passes at the heads of the streams, is hampered in its movements because each portion has for some time been separated from the rest by the lateral or secondary ridges which come down from the central range towards the plains on either side.

When it begins to go down the further slope towards K—K, pressing the defensive before it, these conditions remain unaltered *until the first of those points is reached at which the streams join.*

Supposing, for instance, in the above diagram the enemy, advancing from a direction A, has made itself the master of all four passes 1, 2, 3, and 4, and is already beginning to get down on the further slope. And supposing the front it has managed to occupy by a certain date is represented by the line of crosses in the accompanying

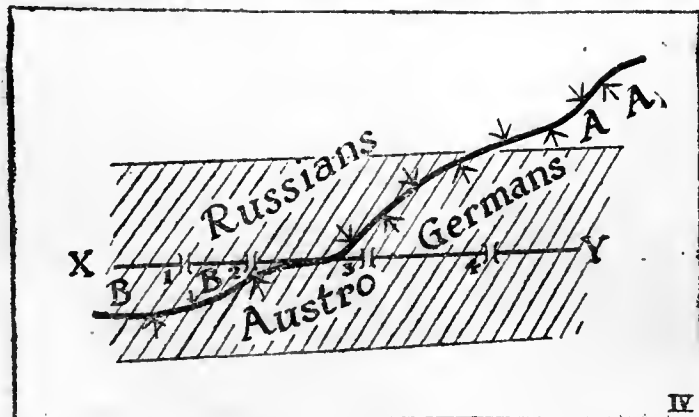
sketch. The four columns which are pressing down the four valleys a, b, c, d, will have various fortunes. Some will probably be able to go forward faster than others. Let us suppose that for some reason the progress is more rapid towards the X end than towards the Y end, and that after a few more days' fighting the front is represented by such a line as the line of dots on the accompanying sketch. It will be observed that the force which is fighting its way down valley a is very close to the point e, where the two streams a and b join. When the advance gets to c *it will cut off the retreat of the enemy still operating in valley b.* For that enemy to try to get away towards valley c across the lateral ridge which separates the two valleys will be difficult or impossible. Therefore, as the advancing force coming down valley a gets nearer and nearer to e, the enemy force in valley b is in greater and greater peril of finding itself cut off from food and munitions altogether. If it is to save itself it must fall back; and under the mere threat it would do so rapidly.

Therefore a successful advance along valley a is enough, when it has been sufficiently pushed forward, to clear at once valley a and valley b of opposition. Even, therefore, if the enemy in valley b has been able to keep up a much better defence than in valley a, the lack of success of the enemy in valley a has the effect of neutralising his success in valley b, and the last state of the front of both armies will be that of the dashes. The appearance of the invaders at e only from the one valley, a will automatically give control to the invader of both passes 1 and 2 and of both the roads leading down from them.

The process continues. No matter how well the defensive keeps its end up at the Y end of the chain, if the invader at the X end pushes down to the point G, where the streams all unite, he threatens with destruction the defensive far up valley c and valley d, and it must fall back rapidly, if it is not to be destroyed. In effect, the mere presence of the invader at E will almost certainly make the defensive towards Y begin falling back rapidly, and long before the invader is at G his advance will have automatically uncovered the whole of the mountain belt and the defensive will have been forced back to the line K—K.

THE "DOUBLE THRUST" OF THE OPPOSING ARMIES.

Bearing all these principles in mind, we can, by examining the actual points in the Carpathians



during the last three weeks, discover how matters stand. The Russian and Austro-German armies now at issue in these mountains lie opposing each other upon a line which makes an angle with and

crosses the main crest. The position may be expressed in the foregoing sketch, where X—Y represents the crest of the Carpathians, the shaded area the mountain belt, the part left blank on either side the plains, and the brackets (1), (2), (3), (4), the four main passes of the Dukla, the Lupkow, the Uzso, and the Jablonitza, of which the last three are railway as well as road passes, while the thick line running transversely through the whole represents the front of the two armies. In such a scheme the most salient point and that which leaves the issue most in doubt is this:—

That the Austro-Germans are in possession of a great deal of the plain upon the far side of the mountains in the district I have marked with the letter A; while the Russians are only in possession of a narrow mountain district beyond the crest, which I have marked with the letter B.

If the effort of either combatant were precisely the same in character and in strength, it would be obvious that this possession of the plain on the Eastern flank by the Austro-Germans would give them the advantage over the Russians, and a situation such as that represented in the diagram would mean that the Russians could not hope to force the Carpathians. For although they had crossed at one place, they would appear to have been badly beaten in the race for the plains by their opponents crossing at another, and the Austro-Germans, with their advantage of roads and railways in the plain, could bring such an effort to bear there that those plains at A—A would become the principal field of action, and the Russians could not move with safety until their enemies had been driven out of the flat country.

But, as a fact, the effort has not been of the same character upon the two sides. The Austro-Germans occupying the plains at A—A, and the belt of mountains between those plains and the main crest, have been where they are for several months past. They did not slowly beat the Russians back. The Russians voluntarily retired before greatly superior numbers long before Przemyśl had fallen, and long before their new munitioning and equipment had permitted them to bring forward reinforcements.

The Russians are not upon this Eastern flank in the position of a force in front of which the dam of pressed invasion has burst. They are on a calculated defensive, long drawn up and held with sufficient numbers.

At the other end of the line, the X end, although the Russians are still far from the plains, their advance into the belt B—B has been the result of steady and heavy fighting against a

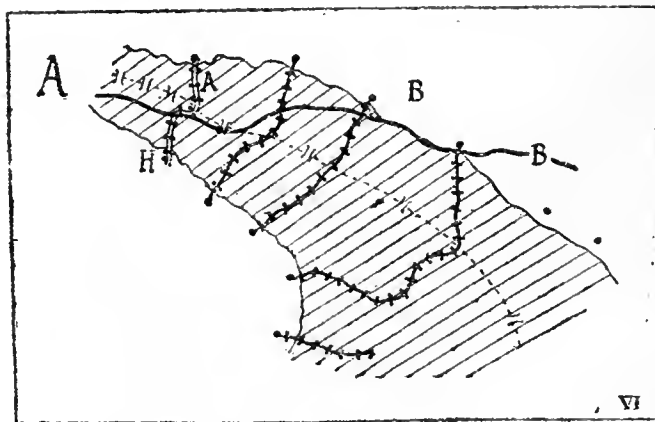
defensive which has been slowly beaten back, and which may at any moment betray signs of exhaustion.

Nor is this the only matter in which the apparently superior position of the Austro-Germans must be qualified.

The Carpathian belt is not of even width, nor its difficulties of ground of equal character, nor its passes equally easy to use in the maintenance of communications. Its actual shape is not the parallelogram represented in diagram IV., but rather something like that of diagram V., in which the increasing width of the range as one goes south-east is indicated by the shape of the shaded portion and the increasing difficulty of the ground indicated by the increasing closeness of the shading as one goes from north-west toward south-east. Though, therefore, the Austro-German line covers a good deal of the northern plain, that is, a portion of Galicia and all the Bukovina, while the Russian line only covers a small mountain portion beyond the main ridge, yet the Russian advance represents an easier field of action and less perilous communications upon *its* side of the crest than the Austro-German effort upon *theirs*. Moreover, the increasing difficulty of the ground as one goes south-east means higher mountains, both lateral and main, deeper ravines, far more extensive woods, and, I believe, a rarer population.

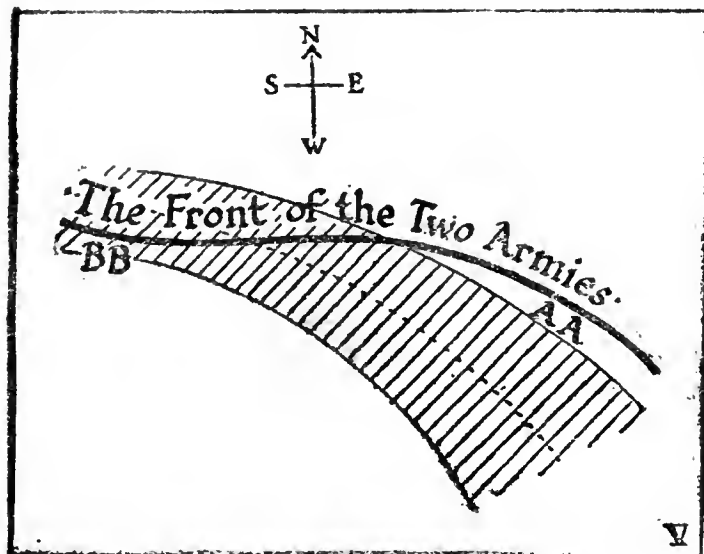
The modification of the position is further emphasised by the nature of the passes which, when they are studied, will be seen to be at once easier and closer together where the Russians are pressing forward than where the Austro-Germans hold them in check.

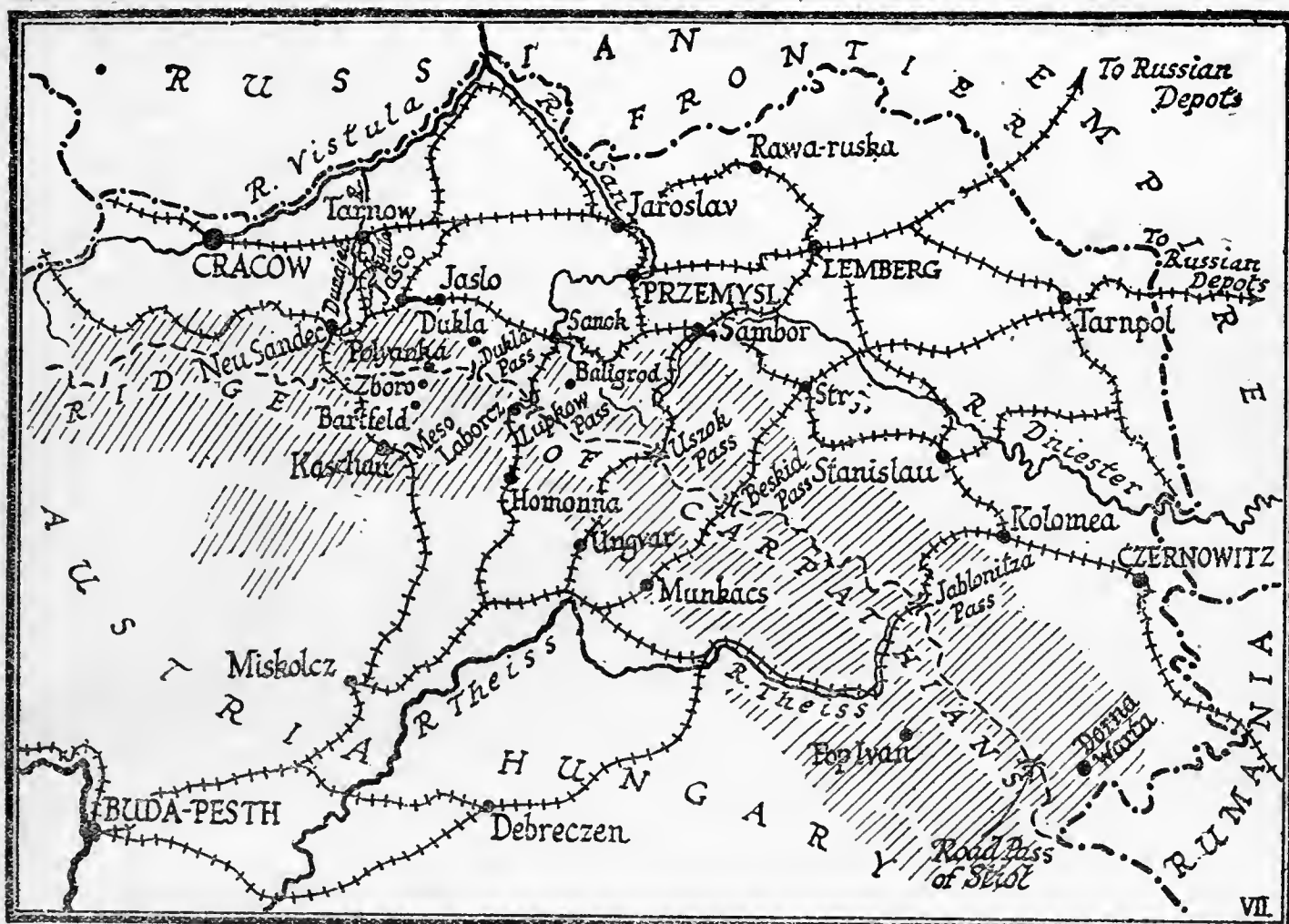
In order to appreciate this the following sketch map may be useful.



Taking as the limits of the plain country the principal towns which stand at the issues of the valleys and marking these with dots, giving the railways in the usual convention (the single lines single and the double lines double), and showing the principal road passes by brackets, it is apparent that every facility for crossing the range increases as one goes to the left—that is, northward and westward—and that whoever is pressing on in the region A—A has advantage over his opponent pressing on in the region B—B.

It is upon this general advantage that the Russians are now counting, in spite of the fact that their enemies have a good footing on the plains, which *they* have not; the actual front being very much what the thick line is on the same sketch. Should the Russians, for instance, succeed in forcing their way down to the point H (which is Homonna, and at the gate of the plains), they





will be in a better position to advance southward than will the Austro-Germans to advance northward. For they will have behind them short, easy, and numerous communications, while their enemies will have long, difficult, and few communications.

Let us conclude this survey of the mere positions by examining the ground and the communications in some detail, and for that purpose I will append another sketch map.

Notice in the first place upon this map the length of the front. The Austro-German defence of Cracow holds the valley of the Dunajec in its lower part, and the valley of its tributary, the Biala, up to the summits of the mountains. In other words, the railway from Tarnow to Kaschau cannot be used by the enemy, but he has probably by this time built a subsidiary line linking up Neu Sandec with the main Cracow line. From this front along the Dunajec and the Biala, from, say, such a point as Jaslo to Dorna Watra on the Roumanian frontier, is a line near to which, but in a bow slightly bending eastward of which, runs the full length of the Carpathian chain, or, rather, of that part of it concerning the present operations. The direction is but a little eastward of due south-east; the distance is 410 kilometres, or just under 255 miles. Counting the sinuosities of the front and the curve of the mountain chain, we are dealing with something rather over 300 miles of country. In this stretch the range continually rises. The height of the mountain mass above Bartfeld is about 3,800 feet high. Immediately to the east the whole range sinks, and there is a sort of natural saddle, the lowest point of which is the Dukla Pass; for about that point the rise begins. There is a peak, before the Uzsok Pass is reached, already nearer 4,600 than 4,500 feet. In the midst of the vast woods forty miles away to the south-east there is a peak not far short of 6,000

feet. Beyond the Jablonitza Pass the Pop Ivan is over 6,000, and immediately overlooking Dorna Watra itself and the Roumanian frontier is a peak nearer 8,000 than 7,000 feet in height.

As with the peaks, so with the passes. They climb higher and higher as one goes from the region of Cracow towards the frontier of Roumania. The Lupkow and the Dukla are not 2,000 feet above the sea; the Uzsok is nearly 3,000. The Beskid Pass between Stryj and Munkacs is a little lower, but the Jablonitza is well over 3,000, and the road pass of Stiol, which is the highest of all, is, I believe, nearly 4,000.

We have already seen that with the gradual rise and broadening of the Chain as it goes southwards the country gets more deserted, the forest larger, and the communications more rare. Within the first sixty miles of Polyanka the passes, all of which are in the hands of the Russians now, number no less than six high roads and one double line of railway. In the next sixty miles you have but three road passes and two single lines of railway, unless one counts as two separate avenues for advance the two roads which diverge from the Beskid Pass, one towards Ungvar, the other towards Munkacs. In the remaining distance of over 120 miles there are only two road passes, one of which, along the Delatin or Jablonitza, is accompanied by a single line of railway.

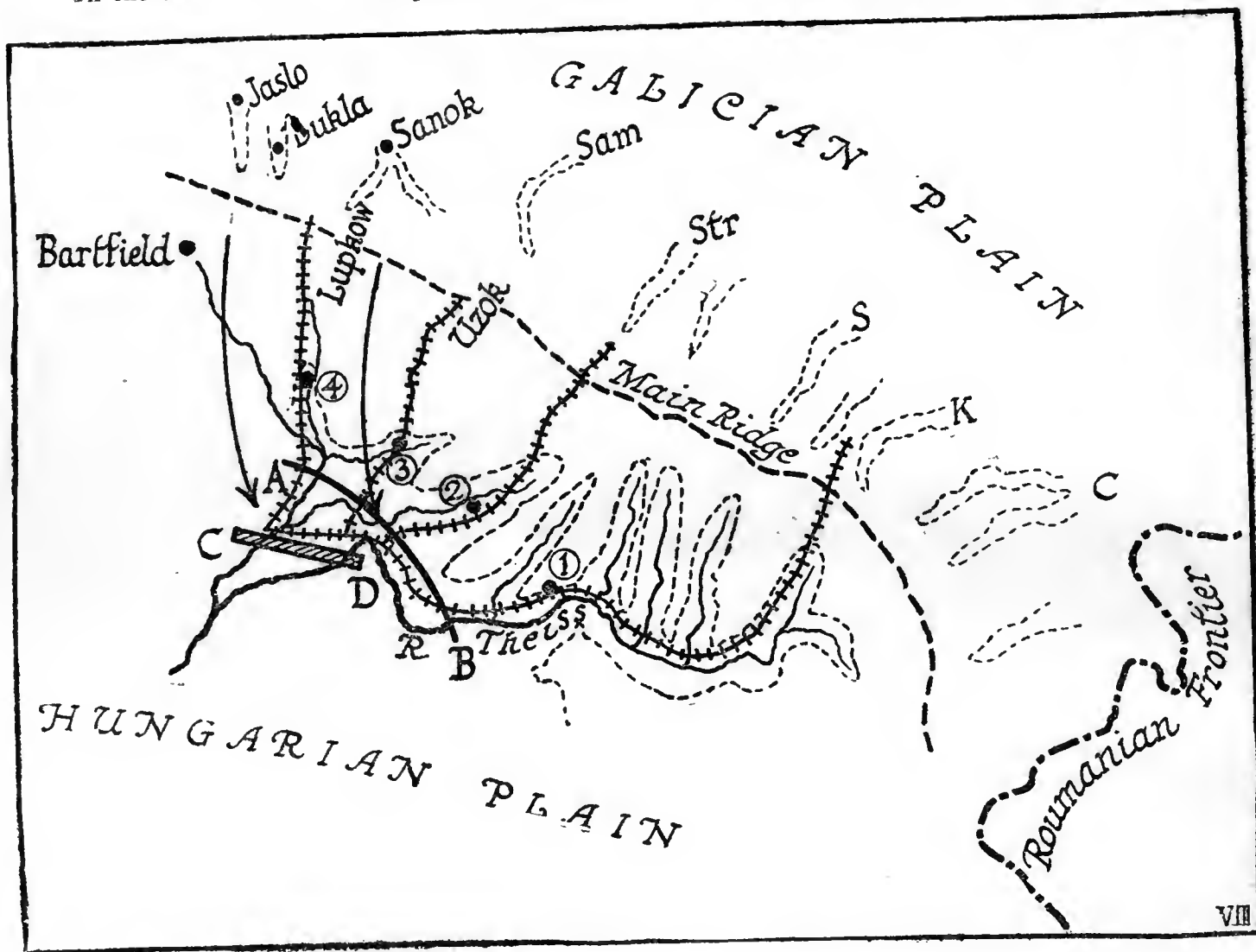
In connection with these passes it may be of interest to delay for a moment upon a point which has been discussed recently in the papers: the accuracy of the term "Magyar Way." Tradition points to the invasion of the Hungarian Plain by the Magyars in the ninth century over the comparatively open gap which leads from Stryj to Munkacs, and is today generally known as the Beskid Pass. This tradition is accepted, I believe by the learned bodies of modern Hungary, and the national monument

erected in memory of this arrival of the Hungarian nation to its present seat stands upon the plateau of Munkacs itself. But there is another tradition which gives the name to the next pass, the Jablonitza, and this is the one followed in the map issued by Messrs. Dobson and Molle under my name.

In the examination of this part of the Car-

the mouth of which is Sambo (Sam); the two at the junction of which is Sanok, and, further on, that of Dukla and that of Jaslo.

But while the valleys on the Galician side thus follow a normal course and come down parallel one to the other from the crest of the mountains, those on the Hungarian side all "bunch," as I have described, into one compara-



pathians as a strategic field, even more important than their gradual rise and broadening to the south and east, and the increasing rarity of communications in the same direction, is the orientation of the valleys. It so happens that the Carpathians not only bend gently outward towards the east—a fact that would, in any case, make the passes over them tend to converge from the east towards the west—but also have a system of water-courses upon the western or Hungarian side which converges the valleys very rapidly on to the Hungarian plain.

It is exceedingly important to note this, because upon it will depend the whole plan of the Russian invasion if the war turns in its next development into a pressing of the Russians into Hungary. The valleys on the Hungarian side all lead down to the main stream of the Theiss, and bunch together in the most rapid fashion upon a short sector, which I have indicated on the sketch map by the line A B. The crest of the Carpathians, running roughly as does the dotted line, is upon the eastern side marked by a number of lateral valleys, leading down normally enough to the Galician plain. As, for instance, that at the mouth of which is Stanislaw (S), the two at the mouth of which are Czernowitz (C), that of the Pruth, at the mouth of which is Kolomea (K), that at the mouth of which is Stryj (Str), that of

tively small space, and the strategic effects of such an arrangement are considerable. The railways follow the valleys, and so do the roads. Szollos (1), Munkacs (2), Ungvar (3), Homonna (4), the towns at the valley mouths on the Hungarian side, stand upon a line only eighty miles in length. The corresponding towns upon the Galician side stand upon a line three times as long.

The effect of this is that a successful advance from Galicia into Hungary will, if it is pressed home upon the left or west of the line, decide the fate of the eastern end of the line.

Supposing, for instance, that the Russian advance from the left in the above sketch map got as far as the shaded bar C—D, the invaders would then be in possession of all the issues into the Hungarian plain. They might hold not forty miles of front and yet be cutting all the lines of retreat for all the enemy forces on the crest of the mountains and beyond them from the Uzok right up to the Roumanian frontier.

Put all this together, and the lesson is plain. Of two things, one, either the Russians intend to make the Carpathian front the chief seat of their activity during the next few weeks, or they are only clearing out the pressure upon them in this retreat and intend their main effort to be made across the Dunajec and on towards Cracow.

In the second case the conformation of the

valleys is of no particular importance. Having got a good grip of the Carpathians, they will not proceed further towards the Hungarian plain. But in the first case the conformation of the valleys is very important indeed, for upon the way in which they "bunch" together towards Hungary Russian success would depend. And, further, the effort which has captured the Dukla and the Lupkow, and which is now menacing the Uzok, would become explicable.

If it is the Hungarian plain which is the objective of the main Russian forces (and the chances are that this is their objective), then it is manifest upon the argument developed, and from the lie of the roads, the railways, the valleys, the width of the chain at various parts, its difficulties of ground, and its varying height, that a successful passage over the narrower, lower, and better traverse northern and eastern end automatically masters the southern and western.

It is manifest, in other words, that in attempting an invasion of Hungary under modern conditions, with troops so numerous that the front of the whole ridge over 200 miles long can be defended, is best accomplished by hammering hard upon the right of the invaders, and that the attempt at the defence to counter this by an advance upon the broader part of the mountains against the invader's left is handicapped in every way.

Whether the Russians are aiming at the invasion of Hungary or no we cannot tell. They have the initiative, and their commanders know what we do not. But if they are, then pressure upon the north and west is the very fashion in which to attain their end, and the command of the passes of that lower end of the chain, including the Uzok, will determine the struggle.

The immediate future will show whether this object is theirs or no. If it is their object it is best obtainable in the manner they have chosen during the last six weeks of the present fighting.

So far we have been examining the whole problem of the Carpathians statically upon the assumption of an equality in numbers and in munitions upon either side.

But the problems of war, like all problems of human activity, are not static, but dynamic, and an appreciation of the position on this Eastern front can only be arrived at when we have transferred our estimate from static to dynamic terms.

In less pedantic words, the problem of the Carpathians would be solved not only and in part

by the advantage of positions, but also, and much more, by the advantage of numbers.

Now, here direct evidence fails us.

We have no statistics to guide us. But we can adopt certain general conclusions based upon the "feeling" which each side has made of its opponent, and also upon the knowledge of the recent Russian munitioning, of the recent German efforts in this region, and of the recent German weakening upon the Western front.

It is no unfair estimate to gauge the opposing forces between the Dukla and the frontier of Bukovina as approximately equal since the fall of Przemyśl. The extreme severity of the struggle, its doubtful fortune, and the tenacity of the counter-offensive beyond the mountains all point to such an estimate.

Further, we know that there has been a comparatively slow, a rather reluctant, but recently a considerable lending of German troops to the Austrians here. We have been given the estimate of three army corps, rising to seven, and possibly, later to ten.

Now, all that points to a very special effort made by the enemy, and yet that effort hardly holding its own. We know, on the other hand, that the Russians have been receiving munitions in an increasing stream during the last month, and perhaps during the last six weeks. We further know that the numbers of the Russians in this region have been increasing during precisely the same period, and we know that the total numbers they can put in the field are chiefly limited by this power of munitioning and equipping, in which they have been handicapped during the winter.

The conclusion is clear. If the Russians are making the Hungarian plain their objective, they can, to the strategical condition analysed above, add, as the season proceeds, the dynamic element of numbers.

I repeat: One may not presuppose in the course of a war which of two alternative objectives is in the mind of a commander who has captured and retains the initiative. And that is the position of the Grand Duke to-day. If his objective shall be Cracow or any other, the arguments given above lose, not their cogency in respect to the Carpathian chain, but their importance in the study of the campaign. But if his objective is the Hungarian plain, then this analysis of the obstacle which covers that plain will prove its value in the operations in the near future.

INFLUENCE OF AIR POWER.—V.

THE AERIAL DILEMMA: A SOLUTION.

By L. BLIN DESBLEDS.

READERS of the notes on the Influence of Air Power which have already appeared in these columns will, perhaps, remember that the writer, in his previous articles, has endeavoured to show that, when analysed, it is found that the capabilities of aircraft in actual warfare at present give rise to a difficult situation, which amounts to a real dilemma. That difficulty is due to the fact that air fleets, as we now know them, can be used both as an *arm* and as a *service*. As an arm, an aerial force is used to supplement other arms, such as the cavalry,

the artillery, &c., and, in consequence, it must be subordinated to the commanders of those various arms. Thus, if an air squadron is working in co-operation with the artillery with a view to assisting or correcting gunfire, or to discovering the position and arrangement of hostile batteries, or to carrying out other kindred tasks, it is evident that, for maximum efficiency, that air squadron must be subordinated to the artillery commander. Subordination and co-ordination are equally necessary in the case of co-operation between the aerial arm and any other arm, be it the

cavalry, the infantry, or the engineers. It is to their success in closely co-ordinating the employment of their aerial arm in co-operation with the other arms that the writer has been led to ascribe the principal cause of the aerial ascendancy which the British have now obtained, and which has already proved of such consequence that very great care should be exercised in order that it may not be impaired. Although to that close co-operation and co-ordination the efficiency of British air work is directly traceable, yet it must be kept in view that there are other very important causes which have contributed to Great Britain's aerial ascendancy. Among these are (i.) the efficiency of the machines themselves, resulting from good design, careful manufacture, efficient repairing and supervising staff, and adequate transport service; (ii.) a very careful training of the aerial pilots and of the aerial observers, rendering their piloting safe and reliable and their observations of real value; and (iii.) the personal factor, which has resulted in the British airmen making a better use of their machines than their adversaries and employing them with success in circumstances in which their opponents would not dare risk themselves aloft.

When, however, Great Britain's aerial ascendancy is carefully and coolly scrutinised and only incontrovertible facts are allowed through the sieve of exacting criticism, one is forced to the conclusion that as a service, capable of independent action like the Navy, for instance, no country has, as yet, obtained any marked ascendancy, although to be strictly accurate it would seem that, at present, so far as its *offensive* or *direct* value is concerned, the advantages of aerial power lie, perhaps, with the enemy. The writer would not draw public attention to this state of affairs if he could not at the same time propose a remedy, which is not available to our opponents. But, before doing so, he would like once more to state clearly the nature of the aerial dilemma now facing the belligerent Powers. Shall a commander look upon his air fleet as a service and employ it to exert direct influence, in which case he would have to forgo the advantages resulting from the co-ordination of his aircraft with the other arms, or shall he employ his aerial force as an arm to exert the indirect influence of air power, in which case he would have to renounce the possible direct effect of the influence of air power?

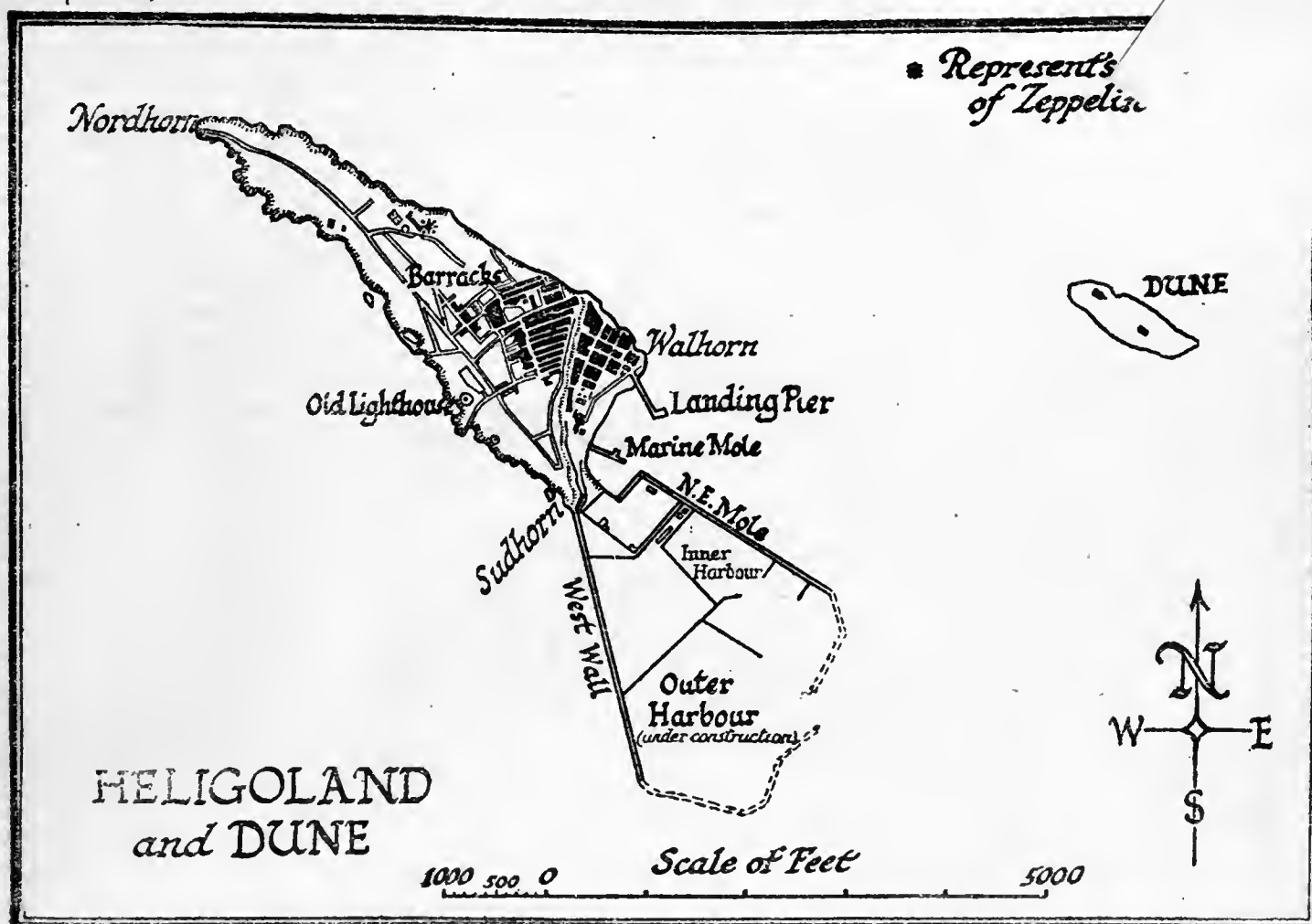
The tendency, both among the Allies and the enemy, has been, up to the present, to employ their aerial force mainly as an arm. But, the offensive value of aircraft having been recognised, several air raids have been undertaken both by the Allies and the enemy. Those air raids which have lacked in boldness so far as the number of machines is concerned have not had very lasting effects for various reasons. All these reasons, however, can be traced directly to the fact that the present organisation of an aerial force does not allow it to operate as a service, with freedom to act entirely on its own initiative as and when circumstances demand. In this connection it is very important to note that the enemy, not from any special effort of their own, but through the force of events and, to a very great degree, through Great Britain's very ascendancy in the employment of the aerial arm, has, in part, escaped from the horns of the aerial dilemma enunciated above. This is a point worth considering with care.

The readers of this publication will perhaps remember that in one of his previous articles* the writer explained why the Zeppelin airships were unsuited for land fighting but were valuable for naval warfare. The ascendancy which the Allied airmen have obtained since the writing of that article further increases the unsuitability of the Zeppelin airship as an aerial arm for land operations, and, therefore, the German artillery or cavalry commanders never have recourse to the co-operation of their Zeppelins. While the *uselessness* of the Zeppelins *as an arm* for land operations has had the result of releasing them to an independence of action of their own, so far as land warfare is concerned, yet, as a naval aerial arm, they are still of potential value. In this respect again their utility has not been in evidence, but, in this case, through no defect in the airships themselves. This is a point worth understanding fully. As regards the war on land the Zeppelin, as an arm, is of no real value in view of the anti-aircraft organisations of the Allies and of their aerial ascendancy obtained by a judicious and bold employment of their aeroplanes; with reference to sea warfare, the Zeppelin, as an arm, is, again, of no real value, not through any anti-aircraft superiority or aerial ascendancy of the Allies, but through the enforced seclusion of the German fleets in their harbours. There being no German naval operations of any importance, there is no use for the Zeppelin airships as a naval aerial arm. The net result of these various circumstances is that the Germans are now in possession of an aerial force capable of entirely independent action—that is, one which, within restrictions imposed by the machines and their personnel, can, for all intents and purposes, be considered as a service and thereby capable of exercising its influence directly. Thus it is that the enemy, on account of the unsuitability of their airships for co-ordination in land warfare and of their inability to co-operate with naval operations, have not, at the present moment, to consider the dilemma in exactly the same light as the Allies. In consequence they have somewhat evaded a difficult situation, and are even able to turn it to their advantage. Thus they have carried out recent airship raids in the neighbourhood of Paris and on the North-East and East coasts of England. It is very likely that, with the coming fine season, the Zeppelin service will attempt to exercise direct influence of air power on a more comprehensive and more sustained scale.

Now it is necessary that the Allies should possess means of exercising the direct influence of air power to at least the same degree as their adversaries. In other words, it is imperative for them to devise some method whereby to escape from the dilemma, and, as regards Great Britain, the writer ventures to suggest a simple plan whereby this can be done.

Great Britain's direct influence of air power, at the present juncture, should possess three characteristics: (a) It should be at least as great as that of the enemy; (b) it must be capable of warding off the enemy's menace; and (c) it must not be detrimental to the aerial ascendancy which Great Britain already possesses. It is not a very easy matter to calculate the number and exact potentiality of the existing Zeppelins for offen-

* "The Modern Military Zeppelin," LAND AND WATER, Dec. 26, 1914.



On this map of Heligoland is shown the position of a Zeppelin shed, completed and handed over to the German authorities since the outbreak of hostilities. In view of the recent activity of the Zeppelin airships the exact position of the Zeppelin base in the North Sea cannot but be of very great interest to our naval authorities. A description of that most up-to-date aerial base was given in the issue of LAND AND WATER, dated January 16, 1915. The shed is about 625ft. long and 180ft. wide, and like the one near Cuxhaven, it is of the "revolving" and "collapsible" type. Close to it is a factory for the manufacture of the necessary hydrogen. It is estimated that the Zeppelin base of Heligoland, which, normally, contains two airships, has been built and equipped at a cost of £20,000.

sive purposes, so that, for complete safety, the plan must allow for a liberal estimate of the enemy's direct aerial potentiality. Since the enemy can aerially menace a great number of places the plan must provide for preparation and readiness at a great number of points. It is evident that this cannot be done by employing, at various places, the machines or military pilots who are necessary for the maintenance of the British aerial ascendancy.

The plan which the writer proposes, and which fulfils all the preceding desiderata, is the formation of a National Air Service by arousing local initiative, especially in the sea-coast towns. The National Air Service could only be successful if it received Government sanction and if it worked in consultation with the official aeronautical departments. In accordance with the suggested plan every seaside town would be asked to be responsible for the construction, locally or other-

wise, of one or two aeroplanes and for the training of one or two pilots. Every seaside town would, besides, undertake to have always under construction and training one or more machines and pilots. In this manner there would be, in a very short time, a number of aeroplanes distributed along the coast of Great Britain in constant readiness to ward off a Zeppelin visit. After a short time there would be a nucleus of an offensive air service ready for independent offensive operations. Such a fleet would not only be a suitable one for carrying on war, on a large scale, into the heart of the enemy's country, but also would be especially valuable for coping with the German submarine warfare on commerce. There are, of course, many details that would have to be settled with regard to rendering efficient such a National Air Service as outlined above; but in principle the scheme, as a solution of the dilemma facing us, is simple and practical.

THE WAR BY WATER.

By FRED T. JANE.

NOTE.—This Article has been submitted to the Press Bureau, which does not object to the publication as censored, and takes no responsibility for the correctness of the statements.

THE NORTH SEA—THE POSITION OF HOLLAND.

ALTHOUGH it yet seems early days to speculate as to Holland being dragged into the war, there are not wanting various recent indications that Germany is seeking a pretext to establish herself in the Netherlands.

German ideals as to possessing the Rhine down to the sea are, of course, neither novel nor secret; but we appear to be on the verge of a situation created by the naval war which

has no connection with past sentiment, but which has been entirely brought about by modern needs.

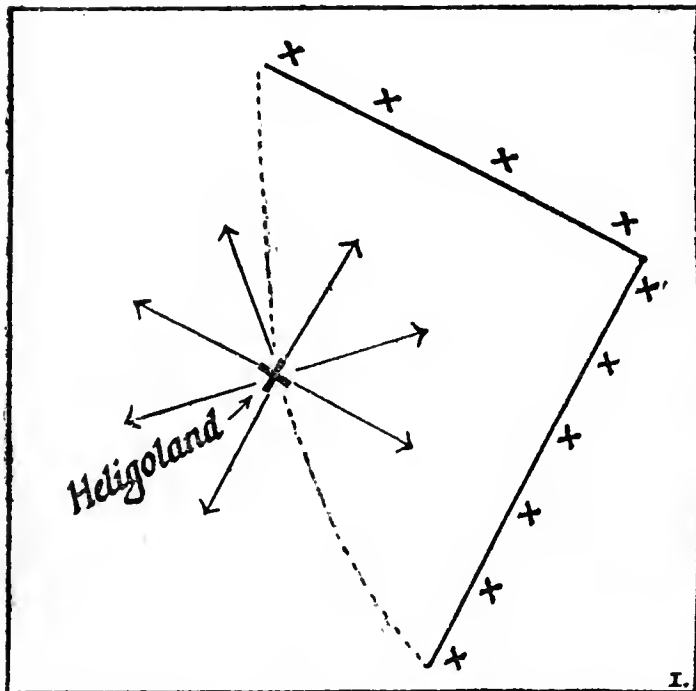
On the outbreak of war Germany had a very restricted sea front. This restricted sea front was then and before that time generally regarded in Germany (and here also for that matter) as a German asset. We are all familiar with the comparative diagrams which used to be produced: "What Germany has to defend," represented by a species of dot; "What Britain has to defend," indicated by a very long line.

In its way the diagram was misleading, because

"defence" is an incorrect term to use in relation to warfare—especially naval warfare, of which the be-all and end-all (if success is to be hoped for) is attack.

However, this coastal question obtained as a classic, and it is merely quoting ancient history to say that Germany regarded her small coast line as a valuable asset. She more or less fortified every yard of her coast line at a cost which would certainly, if otherwise expended, have provided her with a fleet fully equal in strength to that British Fleet which the war found her faced with.

Approximately the ideal adopted was an impregnable inverted V, in the centre of which lies Heligoland. It is to be expressed diagrammatically as indicated in Figure 1, "x".



representing the passive shore defence, the arrows the active local naval defence based mainly on Heligoland.

From the impregnable barrier thus created the German Fleet was theoretically to emerge as convenient—being able to fight or retire to safety when desirable, as circumstances might dictate.

On the face of it this seemed a very strong and alluring position, especially when contrasted with the relatively vast and undefendable (by complete shore defences) British coast line. There—till the war broke out—the matter remained.

A very short experience of war, however, revealed the now obvious fact that the smaller the coast line the easier it is for a superior enemy to establish an efficient watch over it, limiting all egress to the range of the local defences. Paradoxical as it may at first sight appear, Germany's weakness lies in the very strength of her inshore defences.

Her tardy recognition of this is evidenced by her frantic efforts to reach the sea at places beyond the German coast line. From the military point of view (using military in the strict Army sense) there was, we may take it, no very special advantage in securing Calais. Yet Calais was sought for at extravagant cost. Similarly large efforts in Belgium were directed to establishing control of a sea front—that is to say, operations for naval rather than strictly army purposes—the obvious objective being the creation of a more extended sea front, and so a corresponding increase of the area to be watched by the British Fleet.

We can see the advantages of an extended front in our own case in the failure of the German submarine blockade. It is impossible for the available hostile force to watch more than a small fraction of the total area; on the bulk of the mileage merchant ships can come and go with impunity.

With Germany the exact conditions are different; but the main principle involved remains the same. So far, so good. But, the mouth of the Scheldt is closed to German war shipping. The submarines which she is putting together at Hoboken can hardly reach the sea except through what are now neutral Dutch waters. Every really suitable harbour on the coast is Dutch, not Belgian. The Dutch fleet is insufficient to offer any effective resistance in defence of its bases, and it happens to consist of ships which, being designed to operate in Dutch and contiguous waters, would be a useful reinforcement to Germany if captured.

To this add facts as they have happened during the last few days. Dutch vessels have made their nationality abundantly clear. Not content with names and nationality painted in huge letters on their sides, they have been veritable

sea picture palaces of Dutch flags and other evidences of neutral nationality. The very stupidest of German submarine captains could not possibly have sunk any Dutch vessel "by mistake." Such slaughter of the innocents as has taken place *must have been entirely deliberate*, entirely in the category of "things ordered."

There is no other possible hypothesis under which this matter can be explained. Wherefrom we are driven to assume that, for purposes of her own, Germany is bent on driving Holland into war, and that a war against her is well inside the probabilities, mainly or entirely in order to secure for Germany an effective extended North Sea coast line and bases which Belgium, despite Zeebrugge, has been unable to afford.

Holland—once a great Sea Power—can, however, provide them. Not to put too fine a point upon it, Holland is Germany's best trump in the war by water. By driving Holland into the Allied Camp, Germany has everything to gain and nothing to lose. Holland is equally useful either as friend or foe. But as a neutral she is a hindrance and a nuisance to Teutonic schemes.

Military matters are not my province; but I take it that we are in no position to assure Holland much more immunity on land than we were able to afford to Belgium. On which account we may yet see the Dutch driven to accept a German alliance. If they do, we cannot blame them—we can only put it down to our lack of military power to back up our Sea Power. So far as Sea Power alone is concerned, we may safely rely upon it that the British Navy has the possible situation well in hand. But, whichever way this particular cat jumps, we must remember that Holland is gradually being forced into an invidious position, and we shall do well to remember that, since Germany is obviously endeavouring to force her to side with us, it will probably appear to Dutch statesmen that the lesser evil will be to take sides with Germany. On the whole, it may be the lesser evil for us also. Our main business is to see to it that Germany does not extend her sea front. The rest—pregnant as it may seem—is a matter of relatively small importance. In the coming submarine warfare every extra mile of coast that can be utilised will have a value far above anything that could have been conceived of in the old days, when warships operated in considerable groups and were always easily located. With submarines the groups are much smaller, and single action is not uncommon, while location is very difficult. Equally difficult will shutting them in be, a very high numerical preponderance of blockaders being essential to any success.

One way and another, it looks as though future North Sea operations are going to be coastal affairs, having for their prime objective the curtailment of hostile bases, as opposed to the old idea of endeavouring to entice the enemy out and then fight him on the open sea.

Of course, there never was a time when it was not recognised that, given the destruction of the base, the sequel would be the annihilation of the fleet operating from it; but co-incident with this, there was ever the fortification of bases to an extent which more or less rendered them impregnable to ordinary warship attack. Bases have been captured by investment from the land side, as in the case of Port Arthur, but such operations are necessarily very lengthy, and they are not possible in many cases.

Submarines, however, from their ability to use extemporised bases, will, of necessity, force the pace and render it more and more imperative for us to curtail in every possible way Germany's access to the North Sea. On that, more than anything else, the main issue depends.

THE BALTIC.

Considerable importance may be attached to the Swedish report that a large German fleet has been seen in the Abo direction. If there be any truth whatever in the report (and it has a circumstantial sound) it would look as though the pressure of Russian sea power in the Baltic has made itself felt, and that Germany has seriously embarked upon an attempt to destroy the enemy at her "back door."

Such an attempt would naturally be made in very considerable force, for the Russian Fleet has lately been added to by the completion of some or all of the Dreadnoughts of the *Gangoot* class. Equally naturally, there will be nothing for it but for the Russians to retire to some protected base where the Germans will have to contain them—an operation not to be carried out without depleting the High Sea Fleet of some of its best capital ships—half a dozen at the very least.

The alternative is to allow the Baltic to become a Russian lake, with the more or less total cutting off of all such supplies from Scandinavia as at present reach Germany.

For the Russians to attempt any fleet action against odds is quite unnecessary: they can accomplish more by compelling

the Germans to contain them, the containing force being subjected to the perpetual menace of submarine and destroyer attack at a considerable distance from any satisfactory base.

It has to be remembered in this connection that all the main development of German bases during the last few years has been on the North Sea front. Even Kiel has sunk considerably in importance during the last few years, while Danzig has vegetated for years. Its status is about equal to that of our dockyard at Pembroke, less the fine anchorage which Milford Haven affords. Kiel is, or was, the Portsmouth of Germany, but from Kiel to the retiring places of the Russian Fleet is a far cry. Swinemund is to all intents and purposes an open roadstead, and the German Baltic Coast offers nothing to be compared with the bases and estuaries which are available for our Grand Fleet.

Admiral Jellicoe's task is hard enough, but it is child's play to the task of the Germans if they seriously attempt to bottle the Russians, and if the attempt be made, it means the virtual withdrawal of all such menace as the High Sea Fleet may have represented where we are concerned. It means that Germany, compelled to assert the mastery of the Baltic, is giving up all ideas of contesting the sovereignty of the North Sea, at any rate so far as big ships are concerned.

Very early in the war, in one of the early issues of these Notes, I ventured to prophesy that the Baltic might very probably become the keynote of the major naval operations owing to the fact that Russia possessed a "fleet in being" which had been underestimated in German calculations, and which Germany dared not ignore any longer.

All the present indications are to the effect that, numerically small though the Russian Fleet is, it is yet sufficiently powerful to constitute a very serious strategical menace in Germany's rear.

Feints are, of course, no more uncommon in sea strategy than on land. But allowing for all possibilities in that direction, the probabilities at present all point to the Baltic as the scene of future big ship activities, leaving the North Sea to submarine and coastal craft operations, plus, perhaps, a determined effort on the part of the German battle cruisers to get on to our trade routes.

THE DARDANELLES.

The vague reports which come from here emanate chiefly from Turkish sources, and so need not be too fully relied upon. For what they are worth they indicate that progress, if any, is very slow.

That the forts are capable of giving a very good account of themselves now seems clearly established; and every day will see improvements effected. How much real damage they can inflict is a matter of speculation. Danger would be not so much from direct fire as from high-angle guns and howitzers, the projectiles from which, falling on the decks, are liable to go right down through if sufficiently heavy. The 11-inch howitzers employed by the Japanese at Port Arthur on several occasions penetrated the armour decks of the Russian battleships and made their exits through the bottoms. The damage thus done was altogether out of proportion to anything inflicted on the same fleet by ordinary gunfire, which ships are normally constructed to resist.

Apparently the Turks are fairly well supplied with howitzers, and the Germans have taught them the art of keeping these concealed till the psychological moment. Evidence as to this is that at long range the enemy has never succeeded in doing any damage; all the mischief having been done when the ships have closed in to finish off forts which have appeared to be more or less out of action. All this damage is suggestive of howitzers, which on account of their high trajectory are relatively speaking too short-ranged to be available for anything of the nature of long bowls fighting.

For the rest, we have had the misfortune to lose submarine E15, and as a set-off a Turkish torpedo-boat has been destroyed in the *Ægean*.

As regards the first, E15 ran ashore, and the majority of her crew were taken prisoners by the Turks. As some loss of life occurred the presumption is that she was under fire before or after her wreck—more probably before, though the currents in the Dardanelles are bad enough to account for anything unaided.

The Turkish torpedo-boat accounted for attacked the transport *Manitou*, which had British troops on board. She was subsequently chased by the *Minerva* and destroyers, and driven ashore.

AFTERMATH OF THE COMMERCE WAR.

Apparently there was some fire to the smoke of the German protest that the *Dresden* was sunk in neutral waters, as the circumstance has now been the subject of a practically

unqualified apology to the Chilean Government from Sir Edward Grey. I say "practically unqualified," because care is taken to point out that the British Government is still not in possession of the full facts.

We may expect to see a good deal of spurious capital made out of the circumstance by the Germans, who are great sticklers for the letter of the law when any advantage is to be secured therefrom for themselves.

As a matter of fact, however, if ever International Law were a dead letter, and if ever circumstances justified cases even from the legal standpoint, this incident of the *Dresden* is a case in point.

Although all the facts as to the *Dresden* are still unknown, we have ample evidence that Chilean neutrality has in the past been persistently outraged by Germany, and so far as can be gathered the island of Juan Fernandez was to all intents and purposes a German base—a base, too, not made use of owing to the exigencies of the naval war, but apparently arranged for long ago. Indeed, in some quarters it has been argued that Juan Fernandez is no more Chilean than Kiao-Chau was Chinese, on the grounds that the Chilean Government had leased it to a German. This argument is not on the face of it correct; because the Kiao-Chau lease was a Government affair, whereas the lessee of Juan Fernandez was, or purported to be, a private German subject interested in Robinson Crusoe's Island.

But—unless my memory deceives me—it was airily put forward by the late Admiral von Spee as a reply to questions raised as to his abuse of Chilean neutrality. Along these lines Germany at any rate has no case—she cannot expect to have things both ways.

The Chilean Government was inevitably placed in a very awkward position. Juan Fernandez is the other end of nowhere, unconnected with the mainland by cable, and with a Chilean governor in no position to assert his neutrality—even assuming Chilean sovereignty to be undenied. There were no means of internment the *Dresden*, and so far there is not the remotest proof that she ever intended to intern herself, except, perhaps, as a temporary measure.

Consequently, for our cruisers to have acted other than they did would have been rank folly.

International Law is really International Custom rather than Law. It was Captain Marryat who long ago described an armed neutrality as "generally meaning a charge of bayonets"—an apt illustration of the position of a strong neutral. A weak neutral, on the other hand, is compelled to trust to the observance of custom, and the Chileans were thus very much placed between the devil and the deep sea. They had no means of enforcing neutrality with a "charge of bayonets" while von Spee commanded the victorious fleet in being, and it is to say the least of it wildly improbable that the captain of the *Dresden* informed the Governor of Juan Fernandez of the circumstance that von Spee had ceased to exist.

From every point of view, therefore, the action of the British cruisers in destroying the *Dresden* was logical and justifiable, while Sir Edward Grey's apology to the Chilean Government was at once dignified and diplomatic.

Finally, it may be worth while drawing attention to the extraordinarily small amount of friction with neutrals which our war against the German corsairs has produced. In one way and another every weak neutral has been fully exploited by Germany, and it is to the lasting credit of our Government and our Navy—the latter especially—that this fact has been recognised, and that no neutral has ever had cause to complain that we have misused our naval power to sacrifice a neutral to our own ends. By this procedure we have at times, perhaps, lost certain small advantages; but the circumstance should stand well to our credit in the peaceful, but fierce, trade competition war which will follow the cessation of hostilities. If we have shown that we do not hesitate to disregard neutrality where the enemy has previously done the same thing, we have none the less consistently indicated the possession of a sense of justice which should ever be remembered in our favour.

We very much regret that, owing to indisposition, Colonel Maude has been unable this week to contribute his usual article on Tactics and Strategy. The large circulation of LAND AND WATER compels us to go to press with the cover and advertisement pages some days before publication; as a result Colonel Maude's name was printed on the cover before the news of his indisposition reached us.—EDITOR.

A GLIMPSE OF WAR. WATER.

By W. L. GEORGE.

THE battalion had started long before dawn. At first it had been night, blue, mysterious night, pale and fugitive and hung with little golden stars, the night of the East, made for white courts and the spinning of Scheherazade's tales, a night like blue silk flecked with gems. And then it had passed away hurriedly, as if afraid of the day, of the thunderous sun, like a nymph surprised, leaving behind her as a trail the rose and the mauve of dawn, sweet heralds of a fiercer air.

Private Norley raised his head towards the dawn. He had grown tired of the night, for it had been long, and after a while had thought of nothing save the sand which had mysteriously penetrated between his sock and his foot. But he loved the familiar dawn, for it was not as the brooding night; it was passing. For a moment Private Norley thought of dawn as he had often seen it before, when he had gone of nights to feed some calving cow. It had come up sometimes just like that on Winchelsea marshes, making their grey into opal, and little Rye, upon its tiny hill, into a rosebud. He thought of the marshes for a little while, of the fresh, cold wind full of Channel salt. It hurt his mouth to think of the feel of that wet wind, for his tongue was so dry. The heat was coming; he knew that, for already the dawn was dying, sun-slaughtered, and on the eastern horizon a ball of fire, zoned in flame, soared into the Egyptian sky.

He felt very hot suddenly. And he was afraid. He looked at his wrist-watch; he tried to remember the timetable which the sergeant-major had discussed with the sergeant the night before. They were late evidently; already they should be in sight of El Arish. And for a moment Private Norley wondered what it all was for, why they were going east of the canal, why they had gone so far and seen nothing, neither Englishman nor Turk, what there was beyond the oasis. The bewilderment of the private who can range through empires, ignorant as a horse in blinkers, was upon him. But Private Norley did not long wonder; he was a good-tempered, healthy young animal, who had never before thought of life in general: eating, drinking, sleeping, making love and dying as late as possible, that was the sum-total of him. And he was ready enough to do it all decently. So at once he abandoned speculation, searched the horizon for the palm trees which promised water and shade.

Then he remembered: a full two hours had been wasted at a dry oed. The ammunition carts had, one after the other, stuck in the river-bed, and it had been endless, helping the little oxen, half unloading the carts, shoring up the wheels, so that the beasts might struggle up the crumbling bank of pebble and sand. As the battalion turned towards the south Private Norley caught a glimpse of the carts, massed between the second and third platoon, ammunition wagons, provision carts, ambulances, officers' wagons, canteen, the vast impedimenta of armies. Reflective and impartial, he damned everything on wheels.

The strap of his rifle hurt him a little now as it cut into his moist shoulder. He changed it to the right, and for a long time thought of nothing. There was hardly anything to arouse a thought, for the desert unrolled to the right and to the left, to the front and to the back, without beginning, without end, not quite flat, just like a dirty blanket, with crumples here and there. Sticking out, it seemed, of the horizon a few rocks that looked black against the felty sand; near the track sometimes a few gleaming white bones, camels', no doubt. Notable only, upon the right and left of the battalion, were the flanking parties, watchful little patrols of the camel corps, so far away that even through a field glass they looked like little brown toys. Private Norley was too used to them to notice that they were there. Besides, there was something else to help the silence that had now come upon the marching troops; they had left their bivouac at 'Abu Dara singing the inevitable "Tipperary," but, little by little, the song had died down long before the order came that there must be no talking now. For the heat had come and was growing round them.

He realised it, and suddenly there was nothing but heat. The pith helmet made a ring about his forehead; this was wet, and yet hard and hot, as if his head were bound in metal. He felt the sun upon his cheek, a steady burn, and a sting as of a pin-prick upon his upper lip. He brushed it angrily as

if to remove an insect. There was no insect, but the movement, so different from the steady tramping, brought him out into a heavy sweat. Private Norley called himself a fool, but it was too late. Water seemed to rush from his head into his hair and under his helmet to steam. He found his fingers so clammy that the wooden butt of his rifle slipped away; he dared not touch the burning steel. For a long time he thought of nothing, but just went on with the water running down from that metal ring about his forehead, hot water that soaked his moustache, soaked his eyelashes until he had to blink them free. And even then there was a veil as of steam before his eyeballs. One thought only came to him then: water. As he went he slipped his hand under his coat, touching as he did so his neighbour, who shrank away a little without speaking, knowing that any contact would increase his heat. Carefully Private Norley drew forward the bottle, raised it to his mouth. He could have spat the liquid out, so great was his disgust, for, osier-covered and then felt-covered, and then sheltered by his coat, it was hot. And yet as he swallowed, hating the tinnish taste, the disgusting suggestion of weak soup, he was gluttonous.

Suddenly he thought of water, real cold water, as it flows out between two stones from the spring by Udimore Hill. He remembered that place where in April there always grew so many primroses, and a spasm of rage shook him as he thought that this very minute oxen and horses were drinking their fill of that water, so clear, so cold.

His pal upon the left had seen him drink:

"Pretty fair muck, ain't it?" he remarked.

Private Norley spat without replying. He heard behind him another man making a feeble joke about lining up at the bar when they got to El Arish. Somebody said something Private Norley did not catch, but it awakened an immediate echo, and a precise private, a schoolmaster in civil life, said they ought to have some water from the water cart. In a minute the whole battalion was talking of water, and Private Norley could think of nothing but the water carts between the two platoons, that looked so queer, swaddled up in canvas, like fat old men, to keep off the sun.

In front of Private Norley marched his lieutenant. He was a slender young man, and he went with an air alert and disdainful, as if he did not hear the growing murmurs among the men. Private Norley did not remember that this was one of the popular officers, a good fellow who never punished a man without making him feel in the wrong: he thought of that way of his and hated him therefor; his persuasiveness, added to his rare severity, became an insult. For it was hot, so hot, that Private Norley thought only of feeling hot. He found himself cursing quietly, and then grumbling half-aloud, with five hundred others who grumbled also:

"We must have water. We must have water off the cart. . . ."

The battalion was halted, faced to the right. The Major came to quell the mutiny, trotting along the line on his little black horse, whose sweating flanks shone bluish. He stopped, and upon the yellow sand the shadow was blacker than the horse.

"I hear murmurs in the ranks. They must stop. The next man who complains will be shot." The voice was quiet, not very loud, and yet, so light was the air, every syllable came clean and audible. Then the tone softened: "But, boys, I don't want it to come to that. You've got to understand. We're two hours late, we may be attacked any minute. We may not get to El Arish at all, and if we don't we'll need our water. So I must ask you to be patient." The Major added, with an amiable smile: "I'm feeling pretty dry myself, you know!"

The last words were human and the battalion laughed. They went on. But it was still hotter now, nearly half-past ten and the sun above invisible, for all the sky was as the blue flame of a gas-fire and as burning. Upon the sky-line Private Norley could see four or five palm trees. The oasis! Yes, but he had seen those palms an hour before and they looked no nearer. His tongue was thick and large in his mouth; he parted his lips to breathe and his tongue tried to come out, while he panted like a dog. The sweat upon his eyelashes had caught the dust, his eyes were full of grit, and he wondered vaguely, when he moved his eyelids, why they

did not crackle. He did not look up towards the palms. He merely thought: "We shall never get there," and went on. He thought: "My big toe's blistering." Then again: "We shall never get there!"

A little later he saw a mirage, a village upside down on the top of its own picture right side up. He did not care. He did not know that he cared very much whether they got to El Arish or not. He only knew they never would. His belt hurt his hip. He moved it a little and burnt his finger upon the buckle. . . .

The battalion was lined up in front of the oasis. Private Norley and his neighbour quietly shoved each other: they were fighting in deadly earnest for the scrap of shadow afforded by the stem of a palm tree. But discipline endured: no man moved out of the ranks while water was drawn from the well, and squad after squad stepped forward to fill its water-bottles. The officers, fearing mutiny, dared not delay and risked colic. At last Private Norley drank. . . .

His mouth was full of something that felt solid, something new, something he gulped at savagely, tried to bite. . . . He choked and still fiercely he bit on at the cold thing which filled his mouth. He could hardly breathe, for he could not tear his lips away from the bottle-neck. He had known what it was to eat when hungry, he had known praise, and love, but now his sweating, burning body was racked to the very entrails by the passionate wedding of his flesh in a cold embrace with this water that penetrated him. He felt his lungs swell and an exquisite freshness rise from his breath. It was agony, for his teeth froze; and his head ached above the eyes as if he had bitten ice. But still he could not stop, as if he were in the grasp of some frightful sensual desire that imperiously bade him go on to his delight through the pain. . . .

He stopped, threw down the water-bottle, and, clasping both hands upon his belt where he felt all swollen and cold, he breathed greedily of the hot air. The bottle was empty.

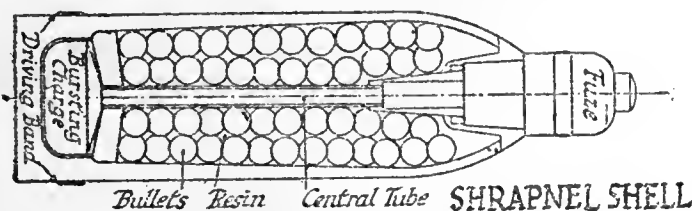
PROJECTILES.

By "A.M.I.C.E."

PROJECTILES employed in modern warfare may be classified as follows:—(1) Shrapnel shell; (2) Common shell, which may be either the ordinary common or high explosive shell; (3) Universal shell, a combination of the shrapnel and high explosive, which has been developed to a considerable extent by the Germans; (4) Armour-piercing shell.

SHRAPNEL SHELL.

Shrapnel was first proposed in 1792 by Major Shrapnel of the Royal Artillery and was introduced into the English Army about 1808. The long wars in the beginning of the nineteenth century gave inventors several opportunities of studying artillery problems, and it was during this period that the shrapnel shell was developed.



Shrapnel consists of a hollow shell filled with bullets and a small bursting charge, ignited either by a time or percussion fuse. The object of the bursting charge is to rupture only the shell in order to release the bullets. Each bullet will then proceed by itself according to the velocity and direction given to it by the bursting charge. When a shrapnel shell bursts in flight the bullets will spread out in a cone which is technically known as "the cone of dispersion."

The thickness of metal of which the shell is made should be strong enough to withstand the explosion of the charge in the bore of the gun, but at the same time it should be easily destroyed by the bursting charge, which should be sufficient only to open the shell. In case the bursting charge is too powerful, the disturbing effect produced on the bullets when the shell bursts would be too great and the bullets would be dispersed over too wide an area. In the shrapnel shell used with the 15-pounder quick-firing gun there are 230 bullets per shell. The body of the shell consists of forged steel, while the head contains the fuse and the base the bursting charge consisting of 1½ oz. of gunpowder, which is placed in a tin cup. A central tube passes through the centre of the shell in order to communicate the flash from the fuse to the bursting charge. After the bullets have been packed into the shell, melted resin is poured in which, when solidified, keeps the bullets from rattling. It is usual to place a smoke composition among the bullets, consisting either of coarse black powder or a mixture of red phosphorus and black powder, the object being to render the bursting of the shell more visible. Apart from its usefulness when ranging it is also important because a dense cloud of smoke in front of the enemy may prevent him from obtaining an accurate range. T.N.T. melted and poured into the shell combines the functions of a packer of bullets and smoke producer.

The exact moment when the shell is exploded may be varied from the instant when the shell leaves the gun to any distance up to several thousand yards. This variation is obtained by means of a time fuse, which may be looked upon as a small automatic apparatus for igniting the bursting

charge. It can be so adjusted as to come into operation at any predetermined time, which varies, of course, with the range. Shrapnel fitted with a percussion fuse differs from "time" shrapnel, for the shell does not open in flight but only after contact with the target. It is chiefly used for range finding. In the olden days, when shells consisted of spherical balls filled with gunpowder, a piece of slow burning match was inserted, having such a length that it would burn about the same time the shell would take to reach its destination, when it would explode. Shrapnel is the principal shell used by field artillery. It is mainly employed against living targets as it is the most efficient "man-killing" type of shell known. When burst by a time fuse in the air, it sends a hail of bullets over a fairly large area, having a deadly effect against infantry in the open. Against entrenched detachments it has, however, very little effect.

COMMON SHELL.

A common shell is a hollow projectile filled with a bursting charge, which is ignited either by a time or a percussion fuse. Common shell occupies a place between the shrapnel and armour piercing shell. It is of very little use against living targets, and its proper field of employment is against earthworks, unarmoured fortifications, and trenches. When made of forged steel it will penetrate thin armour, but would be scattered against modern armour.

Ordinary common shell filled with gunpowder has now become obsolete.

A high explosive shell is simply a common shell filled with lyddite, melinite, T.N.T., or any other high explosive. It is made in two types—thin and thick walled. The thin walled shells are not employed in field guns, but to a certain extent in howitzers.

Thick walled high explosive shells consist of forged steel filled with picric acid or T.N.T. One of the difficulties encountered with high explosive shells is to obtain complete detonation of the bursting charge without using a large quantity of fulminate of mercury. The use of a large quantity of fulminate of mercury as a detonator would be too dangerous, as the shell might easily be exploded before it leaves the gun owing to the great facility with which fulminate of mercury can be detonated. As a rule picric or nitro-glycerine powder is used as an intermedium (which in turn is detonated by a small quantity of fulminate of mercury) to explode the main charge.

In the Krupp high explosive shell the first charge consists of fine grain nitro-glycerine powder, which is enclosed in a small steel cylinder and is fired by means of the fuse. The violent bursting of this small cylinder detonates the primer consisting of T.N.T. or picric powder, which in turn detonates the main bursting charge. Technically this process is known as "progressive detonation."

High explosive shells are generally made to burst by means of a percussion fuse. The French high explosive shell used with the field artillery has a weight of 14lbs., carries a bursting charge of about 1½lb. of melinite, and is made of thick steel which, when exploded, is broken into thousands of small pieces.

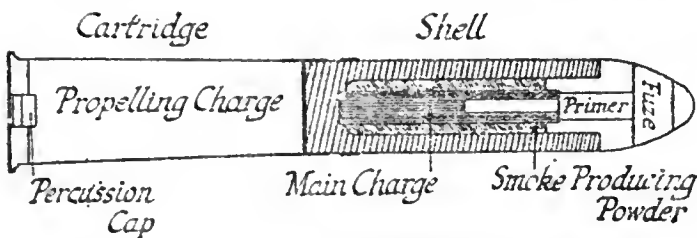
Quick-firing guns fire fixed ammunition; the projectile complete with fuse and bursting charge, the brass cartridge case, containing the propelling charge and primer are com-

bined as a complete unit like a rifle cartridge. The brass cartridge case contains in the base the percussion cap, which is fired by the striker of the lock. After firing, the empty case remains behind, and is thrown out automatically when the breech is opened.

UNIVERSAL SHELL.

In the universal shell an effort has been made to combine the qualities of both high explosive and shrapnel shells. For field guns such a combination would be advantageous, as at present it is necessary to carry two classes of shells, and in the excitement of an engagement it is a very easy matter to use the wrong kind of ammunition. In order to introduce one type of shell many military inventors attacked the problem. In February, 1903, Major van Essen, of the Dutch Army, patented a fairly satisfactory design of universal shell, which was taken up by Messrs. Ehrhardt and brought out in the next year. The universal shell was later on taken up by Messrs. Krupp and Schneider, while the German Army adopted it for their field howitzers.

The universal shell consists of a shrapnel body fitted with a high explosive head. The head contains the fuse, detonator, exploder, and main bursting charge of picric acid, which are enclosed in a steel chamber, entirely separated from the body



UNIVERSAL SHELL

of the shell, which is of the usual shrapnel type. The bullets are not packed in resin, but in T.N.T., which at the same time acts as an explosive. The bullets are blown out in the usual way by a small bursting charge, placed in the base of the shell. When the projectile is used for obtaining a high explosive effect the fuse is set for percussion. The high explosive head detonates violently on striking an object, while immediately afterwards the burster and T.N.T. explode, throwing shell fragments and bullets with great force over a fairly wide area.

For shrapnel effect the fuse is set so that the shell bursts in flight. The bullets are blown out while the head flies forward to explode on impact.

This type of shell is especially useful against gunshields. When gunshields were introduced the high explosive shell was developed, as the ordinary shrapnel has little effect against gunshields. When the universal shell strikes a gunshield it generally tears large holes in it, while at the same time the shrapnel effect immediately following the high explosive action is liable to cause great havoc among the gun detachment.

ARMOUR-PIERCING SHELL.

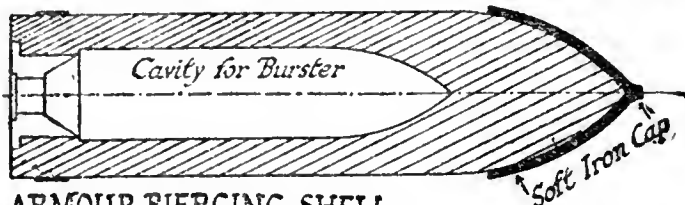
Armour-piercing shells are mainly employed in the Navy for penetrating the heavy armour of battleships. The late Sir W. Palliser introduced the first satisfactory armour-piercing shells in 1863. They were made of cast iron, the pointed head being cast in a metal mould and the cylindrical portion in ordinary refractory sand. By this means it was endeavoured to give extreme hardness to the head, which is the part required to perform the piercing of the armour. They had the advantage of being very cheap, and were successful against wrought iron and soft steel armour, but broke into fragments against hardened steel armour.

The Holtzer projectiles, which were introduced in 1886, had a great reputation, and were made of chromium steel. The addition of chromium increases the hardness and toughness of the steel without increasing its brittleness. When, however, improved steel armour came to be employed the chromium steel projectiles, tempered and hardened as they were to a very high degree, could not pierce the plates. The introduction of the soft steel cap gave the advantage to the projectile in the struggle armour versus projectile.

The term capped projectile applies to a projectile the point of which has been covered by a cap of soft metal with a view of increasing its penetrative effect. In 1873 the Russians carried out certain experiments with capped projectiles, but no reliable information was published. Captain English, a British engineer, observed that the penetrative powers against a Harvey armoured plate were increased 25 per cent. when a comparatively thin wrought iron plate was placed in front of it. He came to the conclusion that the

soft iron plate acted as a sort of cushion, preventing the point from being broken off and steadying it previous to penetration.

As soon as the necessity of capping projectiles became apparent, various experiments in different countries were carried out, but it was not until 1901 that the utility of capping was fully recognised. The difference between capped and uncapped projectiles is astonishing. In a trial 6-inch capped and uncapped projectiles were fired against 11.8-inch Krupp cemented armour plate. Uncapped projectiles fired with a striking velocity of 2,827 feet per second broke upon



ARMOUR PIERCING SHELL

the face of the plate without perforating it, while capped projectiles with striking velocities as low as 2,799 feet per second completely perforated the plate without breaking up. At the moment of impact the nose of the projectile is embedded in the soft iron and thus obtains additional support, preventing it from being fractured. Modern armour-piercing shells are cast from a special mixture of chrome steel, and are subsequently forged into shape in order to secure a better grain.

The chief difficulty consists in hardening and tempering the projectile, especially the point. There are generally two hardening processes—the first by quenching in oil, followed by tempering, and the second after all mechanical work upon the projectile is completely finished. The point of the projectile obtains its required hardness in the final process, but the remainder of the shell does not have the same degree of hardness, as when once the point of the projectile has penetrated, the body passes the hole without difficulty. Finally, the finished projectile is submitted to a gentle heat treatment, which to a certain extent ensures it against fracture due to sudden changes in temperature.

The projectiles have a small cavity to contain the bursting charge, which, as a rule, does not exceed 3 per cent. of the total weight of the projectile. They are stored for three months before being filled with the explosive owing to their liability to split from the strains set up in the metal by the hardening process.

We have briefly dealt with the principal projectiles used in modern warfare. There are, however, some special type of shells which are used at night time for illuminating purposes.

Star shells are employed with field artillery. They are made more or less on the same basis as the shrapnel shell, but instead of using bullets, cylinders of some light-giving composition are employed, which are ignited when the shell bursts.

In another type of shell a number of small parachutes are folded together, which open out after the shell has exploded. In the centre of the parachute an illuminating charge is carried which is automatically ignited when the shell bursts. Krupp has devoted special attention to this type of shell.

QUEEN ALEXANDRA'S FIELD FORCE FUND.

THE proposal for a Wellington, Waterloo, and Napoleon Loan Exhibition of pictures, trophies, &c., in aid of the above fund, described in LAND AND WATER of March 20 by Mr. J. Landfear Lucas, of the Spectacle Makers' Company, is now under consideration in detail by the Countess of Bective, Chairman of the Fund.

Offers of historic relics and objects for the Exhibition are already to hand.

The Hon. Charlotte Knollys has again written to Mr. Lucas, stating that she has explained the present position of affairs to Her Majesty Queen Alexandra.

MR. HILAIRE BELLOC'S WAR LECTURES.

Preston.....	Town Hall.....	Wednesday.....	23 April, 3 & 8.
Blackpool.....	Winter Gardens.....	Thursday.....	29 April, 3.45 & 8.
Liverpool.....	Philharmonic Hall.....	Friday.....	30 April, 8.30.
Liverpool.....	Philharmonic Hall.....	Saturday.....	1 May, 3.
Bournemouth....	Winter Gardens	Monday.....	3 May, 3.30 & 8.
London.....	Queen's Hall.....	Wednesday.....	5 May, 8.30.

MR. FRED T. JANE ON THE NAVAL WAR.

Manchester.....	Free Trade Hall.....	Friday.....	23 April, 8.
Scarborough.....	Opera House.....	Saturday.....	24 April, 3.
Dover.....	Town Hall.....	Tuesday.....	27 April, 8.
Folkestone.....	Town Hall.....	Wednesday.....	23 April, 5.

MR. CRAWFORD PRICE ON "SERBIA."

Bournemouth....	Winter Gardens.....	Friday.....	23 April, 3 & 8.
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COMMANDER BELLAIRS, R.N., M.P., WILL LECTURE AT Bournemouth... Friday..... 30 April, 3.30 & 8.

TALES OF THE UNTAMED.

DRAMAS OF THE ANIMAL WORLD.

Adapted from the French of Louis Pergaud by Douglas English.

I.—ROUSSARD.

TWILIGHT had called to Roussard, Roussard the Brown Jack Hare. He snuffed the drowsy evening scents, the alsikés, the clovers. He stretched himself within his form; backwards from fixed fore-paws until his scut broke through the flimsy roofing; forwards from fixed hind-paws, until his ears and head stood clear.

Daylong he had been drowsing, for the most time with opened eyes as though he feared his sentinel ears might sleep; with rounded, terror-haunted eyes that mirrored every rustle; with drooping, hollowed shells of ears that twitched at every twig-snap.

The glimmering, whispering undergrowth was background to his dreams. Never a liltng course by night, but brought its panic-flight with it; never a day of drowsing ease, but brought night's panic back in dreams.

The stiffened forward stretch relaxed. Roussard, with begging paws, sat up to listen, swivelling his ebon-pointed ears to north and east and south to west.

Roussard dropt back to wash his face, to comb his whiskers, clean his feet. His furry hands danced past his moistened lips, and fluttered down his cheeks, and fanned his muzzle.

He pulled his ears down to his mouth and preened their soft grey linings. He nibbled at his body-fur till every hair gleamed like a strand of silk. He glossed the pointing bristles of his whiskers; he furbished up his pads.

Then, with a little shake, he stretched himself. Like warrior armed, like traveller girt, Roussard, Jack Hare of Valrimond, was ready for the night.

Spring-heeled he leapt, his long ears forward tilted, his white scut drooped, his back a rounded curve.

He landed five yards eastward of his thicket. He claimed that thicket wholly, though Valrimond lies half a league away. Moon after moon he stablished it, as his inviolable domain. The woodland hares, though curious at the first, had, instinct-taught, allowed him full possession—had left him Lord and Master of the Combe.

One hare, one form, one quarter of the wood—such was hare-law.

Yet chance had given the combe to him, chance and the fortune of the hunt. A hunt by two wire-sinewed hounds, double on double, swerve on swerve, and, at the end, when breath had almost left him, a lucky crouch between two plough-turned ridges, with ears drooped back, and fur wind-smoothed.

A night and day he couched—like a grey stone; and, when the gloaming called, set course for home, and passed the combe, and found the combe untenanted.

He owed his life to that. The owner of the combe had crossed his line—and fallen to the dogs.

So Roussard gained his kingdom, a kingdom thicketed with bramble cover, a windless kingdom, flanked by clover fields.

Lilting on feather-balanced feet, as though he feared the sound of them, Roussard danced moth-like to the gap.

A south wind crept to meet him, with kisses for the parched June leaves, with sighing, rustling whisper from the clover.

He slipped without and paused. This way and that he snuffed the air, this way and that swung anxious ears to sift the tangled rhythm of the night. The twilight deepened in a velvet silence. The south wind sighed itself away. Within the supple ramparts of the dusk, there was no suspect sound, no suspect scent.

Roussard let droop his silky ears, and kicked, and bucked, and pranced, for joy of living.

His play-time, feeding-time had come.

He nibbled here and there, a clover-head, a dandelion; but, for the most time, played.

From clump to clump he bounded like a colt; he leapt at his own dusky leaping shadow; he ran the hedgrows end to end; even towards the village street to brave its human turmoil.

But he was quickly back again, back to the dewy clover-fields, the honey-sweetened clover-fields.

For here he had been wont to meet his kin, Jack Hares as crazy as himself, who nosed his nose, and dared him to run races.

Yet for two moons he had not seen a hare.

A smaller race had quartered on the slope, a dark-furred, sulky-tempered race, a pushing, jostling, upstart race, who met his greetings with a scowl, who eyed his passing wickedly, gibbering in uncouth tongue, and crinkling muzzles.

Roussard was half afraid of them, short-eared, squat-bodied, gnomish things who burrowed under earth.

He loathed their presence, yet he failed to link it with the absence of his kin.

Roussard was very perfect knight; he scorned a quarrel with these dwarfs, whose strength and swiftness were not half his own.

So this night, as he sped afield, he took small heed of countless scuttling shapes, which leapt, and stamped, and grunted at his coming.

A waning moon climbed slowly up the sky, dulling the rainbow sparkle of the star-shine, revealing earth in shimmery mist of grey.

Roussard stared round-eyed at the moon, half-fearful, half-perplexed.

Roussard sat on a mole-hill.

Beneath him was a dip of ground.

Roussard's eyes left the moon, and travelling sidelong up the slope, lit on the rubble heap.

Dark shadows jerked about it, and, as the moon climbed higher, shaped themselves.

It was a rabbit parliament.

Some squatted, some sat up. They heaved and thronged and jostled one another. Some shrugged their shoulders, some upreared their scuts, some pricked their ears, some lowered them, as though to voice their ayes and noes, and shalls and won'ts by gesture.

The moonshine lit them doubtfully—a reel and rout of glistening tails and leaping, swaying bodies.

Stub, crinkly, whiskered muzzles twitched grimacing; white chisel-teeth gleamed threatening through cleft lips; short fore-paws drummed on testy, heaving waistcoats; now and again a hind-paw struck the ground with menacing thud, with vicious stamp, which double-scored its argument.

To Roussard, solitary, like all his kind, such concourse, such palaver, was prodigious.

He stared at it with glassy eye, with rounded frigid vacant eye, with eye behind whose soullessness there seemed to lurk presentiment of ill.

Till the sun rose he stared at it; then, as they scattered, he, too, made for home.

He chose the wind he used the most, the wind which crossed the stubble to the dyke, and tunnelled to the hayfield, and skirted the west side of this, and pierced the hedge close to the gate, and so into the lucerne field, and, downwards, to the combe.

He quickly reached the tunnel through the dyke, and reaching it, stopped dead. Two rabbits barred his bolt-hole. Soured-faced they stared at him, grating their teeth, fluttering their puckered muzzles.

They gave way sulkily, one either side.

Roussard pressed on, to thread the run that crept along the hedge. The gap was half-way down its length, but Roussard whisked about before he reached it. From near the gate whiffed mustiness—more rabbits, many rabbits. At least these had not sighted him, and there was yet another bolt-hole lower.

He made a circling cast afield and drew towards it cautiously. Two rabbits watched its entrance.

Roussard retraced his steps, far back this time, towards the dyke, and found the squatting sentinels still on guard. Then, eastward, by a half-forgotten trod, which swerved about in widened arc, and reached the combe on its south side.

This was untrammelled highway, with one smout only breaking it, a tunnel through the thorn hedge flecked with fur.

Roussard swept down it like the wind, with head pressed back and flattened ears, and white scut tilted forward. And rabbits started every side, and glowered, and stamped swift signals as he passed.

He reached the smout, and crouched to slither through it, and found it choked with rabbits.

The sun had risen, Man had risen, too.

It was no time for flights afield. The smout was blocked; then he must leap the hedge.

He backed away and held his strength as he drew to it in an easy canter. Like deer he leapt and cleared it by a yard; and landed in his enemies' headquarters. The slope beyond was brown with them.

Roussard was desperate now. He thrust through, and reached his combe, and flung into his thicket.

His grass-pile rose close-moulded to his sides beneath the barbed entanglement of bramble. Slowly he gained his breath again. His nose ceased its quick snuffing, his ears drooped back and stiffened. In the half-light below the criss-cross tangle he seemed like weather-beaten stone sunk deep of its own weight.

He slept the sleep that was his daily portion, broken by every whisper of the wood, broken by every long-drawn spell of silence, broken by every straying beam which searched his thicket's shadow.

And, when sleep claimed him wholly, he dreamed dreams. His ears pricked sharp, his frightened eyes dilated, he trembled snout to scut, and woke a-tremble.

This day, of all days, he slept ill. The night's adventure weighed on him, the broken course, the rabbit folk. Each rustle was a thunder-peal, each sunbeam a heath fire.

So the slow, restless, haunted hours trailed their long course to sundown.

Once more he idly stretched himself, once more he listened fearfully. There was no note discordant. The wind surred through the trammel of the briar, and fluttering leaf and dancing bud waved farewell to the light.

Roussard leapt forth across the boundary wall, across the leaf-choked ditch that bordered it.

A honeyed scent was wafted to his nostrils, scent of dew-laden clover. Life's ecstasy was his once more. Twilight with rounded, soothing lips had kissed the haunting terror from his eyes.

He tripped, he danced, he caracoled, he gambolled, rejoicing in his solitude, rejoicing in the glamour of the night.

And presently he sped afield, and crossed the rise, and, of a sudden, checked.

His ears had caught a tumult of small voices, a mumble-sound that he had heard before—but where? and when?

The fox's bark he knew, the ermine's spit, the badger's snuff, the shrill of mouse, the whimper of the hunt. But it was none of these.

The answer stabbed his memory like a knife.

It was the rabbits' call-note.

It circled him. It closed on him. From east and west and north and south it spat its vicious menace. Could he break through?

This way and that he slewed his head, this way and that his quivering ears crossed and recrossed like swords.

But Fear had chained his feet. Fear of the nearing skirmishers, grey shadow splashes dancing tuft to tuft. Fear of the serried black beyond, the stamping, grunting, jostling horde, which surged and swayed towards him.

There was no chance of flight; Roussard, perforce, must use his second weapon. Roussard dropt limp to earth and closed his eyes.

A huge buck rabbit drove at him, and butted him and sought to overturn him.

Another followed quickly, with bared teeth.

Another leaping, lashed with his hind-feet and scored a crimson furrow on his back.

Roussard sprang five feet up, and left a strip of white-furred skin behind.

Like ants they swarmed about him as he landed.

Vainly he drummed and buffeted, vainly he dodged and swerved.

The sharp-clawed vermin fastened to his flanks, transpierced his ears, tore at his eyes, mouthed at his silk-furred groin.

He staggered with fierce gnashing teeth about him, and murderous blood-shot eyes aflame, and crimson-dripping muzzles.

He rose and fell, and rose and fell, and presently, they pinned him on his back.

* * * * *

A scream of agony vibrant through the night—voicing a shame unspeakable, an unendurable pain: and then, as though fiends stamped applause, the double-thud of feet upon the turf, and gibber-notes, and chucklings: and then, the slow alternate tread of Man.

The Man passed on his way.

Roussard rose quivering, bleeding, maimed.

His torturers had dropped off him, had scuttled to their holes.

He still could crawl—but whither?

Not to the combe—he knew now why the combe was cursed of hares.

To Valrimond?

To Valrimond slunk Roussard, Roussard the Brown Gib Hare.

CORRESPONDENCE.

TO ATTACK SUBMARINES.

To the Editor of LAND AND WATER.

DEAR SIR,—Lord Dunleath in his latest letter recommends the Admiralty to build fast vessels, of speed 20-24 knots, designed to ram submarines, or of lighter construction and speed, 28-30 knots.

I am afraid this suggestion shows a failure to understand the following points:—

1. The difficulty of designing such craft.
2. The capabilities of a submarine.

With regard to 1, it would be impossible to design a boat smaller than a destroyer which would be able to ram a submarine at any speed over 10 knots without seriously damaging, and, perhaps, sinking, herself. The necessary strength would entail the sacrifice of high speed and easy manœuvring.

With regard to 2, no submarine submerged with the periscope showing would allow herself to be rammed by a hostile craft, as she could dive to any depth up to 100 feet or so in a very few seconds.

Should the submarine be on the surface, she would notice the approach of the attacking vessel in plenty of time to submerge.

Against this may be cited the fact that submarines have been sunk by ramming during the present war; but it is extremely likely that they were either "caught napping" or forced to the surface by some contrivance of which we know nothing.

The Admiralty have doubtless adopted the plan which our own submarine experts consider the most efficient.—I remain, Sir, yours faithfully,

N. O.

OUR MOTOR AMBULANCE FUND.

By ATHERTON FLEMING.

WE have pleasure in announcing that the total amount received for the LAND AND WATER Motor Ambulance Fund to date is £691 14s. 6d. The following errors have crept into our list, and we take this opportunity of rectifying them. A donation of £5 from Mrs. Crighton Simpson was entered as 5s.; 12s. from a Scottish reader is now acknowledged; and a subscription from Mr. James B. Greig, of Laurencekirk, was entered under the wrong name. Our apologies are due to these subscribers. The Fund is now closed, and a full account of expenditure will be published later.

Anonymous, £10; Mrs. Bainbridge, £10; Mr. D. C. Rutherford Lindsay Carnegie, £5 5s.; Mr. Walter Neves, Mr. Frank H. Cauty, Mr. A. L. Wingate, £5 each; Miss M. E. Freeman, £3; "Kiddington Village," £2 13s.; Mrs. Harold Gordon, Mrs. Diarmid Noël Paton, £2 2s. each; Mr. H. Knox-Shaw, £2; Mr. W. Harold Fraser, £1 1s. 6d.; Mr. Sholto Douglas, Mr. R. M. Blake-Smith, Mrs. A. M. Hedley, Captain H. Watts, Mrs. Massey, £1 1s. each; Mr. E. A. Asgood, Miss May Stokes, £1 each; Miss E. B. Sparrow, Miss J. Lambert, Mr. J. H. Cox, 10s. each; Mr. H. Clifford Davis, "Q. E. D.," Miss A. G. Simson, Miss Jackson, Mrs. Murray N. Phelps, Mr. J. Cohen, 5s. each; the Misses Eva and Edith Godman, Mr. R. Henry, 4s. each; Miss S. Thompson, Mr. P. J. Egan, Miss M. Finlay, 2s. 6d. each; Mrs. J. M. Latham, 2s. 3d.; Captain Arthur St. John, Mr. J. Barry, Miss Troup, Mrs. W. Robinson, Miss Holt, Anonymous, 2s. each; Miss M. Meek, Miss S. Wildsmith, Master Jack Henderson, the Rev. E. J. Janson-Smith, 1s. each.

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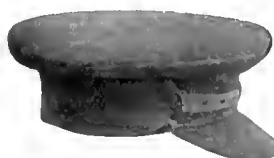


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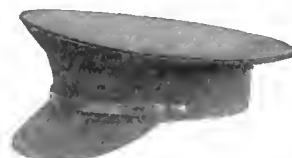
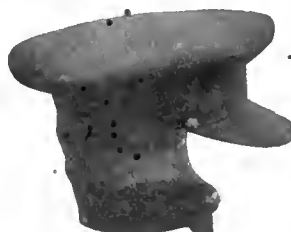


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THE ORIGIN OF GOUT

HOW TO DETECT URIC ACID SYMPTOMS.

URIC ACID, the fundamental cause of all gouty suffering, is in reality a normal product of the human system, owing its existence partly to its introduction into the body as a constituent of certain classes of food, and partly as a result of the natural tissue changes—the wearing out and repairing processes constantly going on.

As soon almost as uric acid gets into your circulation from either of these sources it gives you evidence of its disturbing presence by certain well-defined symptoms, which are nature's signals of impending gouty outbreaks. You feel out of sorts, heavy, and dull, especially in the mornings; your liver is out of order; you are restless, easily irritated, and sleep badly. You suffer from dyspepsia, flatulence, and heartburn. You are depressed, and trifling little affairs worry you. You have persistent and severe headaches. You frequently experience sensations of burning and irritation in the skin, or occasional twinges of pain in your joints, or there may be stiffness in both joints and muscles, and dull aches in various parts of your body.

GOUTY PROGRESS.

When the uric acid becomes embedded in the muscles, gouty rheumatism or lumbago results. At first there is only a slight sensation of stiffness, and an occasional catch of pain. Gradually, as the atoms congregate, and the sharp crystals bore their resistless way into the substance of the muscle, they increase the stiffness, and the piercing of the penetrating acicular crystals causes the sharp, cutting pain that tortures sufferers from gouty rheumatism. This is the term employed when the muscles of the limbs and shoulders are affected, whilst lumbago is the name applied when the loin muscles particularly are involved.

Other varieties of gouty sufferers are chronic, or rheumatic, gout arising from the clogging uratic deposits in the joints, and attended by swelling, inflammation, pain, and stiffness; sciatica and neuritis when the nerve sheaths are penetrated by the sharp crystals, which cause the hot, stabbing pain in thighs or arms; kidney stone and gravel, which are simply deposits of urates in the organs; and gouty eczema, the inevitable result of uric acid forcing its way into the skin.

HOW TO ESCAPE GOUT.

As long as uric acid remains in the system, so long will the pain and agony caused by its presence continue. The uratic masses must be converted into soluble substances, and swept out of the body before relief can be obtained. It has been conclusively demonstrated that Bishop's Varalettes are the most generally effective uric acid solvents and eliminants. They go directly to the root of the matter, and expel uric acid from the system. The rational and scientific mode of action of Bishop's Varalettes is bound to result in successful alleviation of gouty suffering.

Bishop's Varalettes are made by an old-established firm of manufacturing chemists of the highest standing, who have for very many years made uric acid solvents a subject of special study. Their investigations into this branch of therapy have enabled them to place in the hands of the medical profession and gouty subjects a remedy that is at once reliable, safe, and sure. Physicians recognise and acknowledge this by prescribing Bishop's Varalettes daily. Bishop's Varalettes are free from any harmful ingredients, such as colchicum, iodides, mercury, potash, salicylates, and do not contain any purgative, narcotic, or anodyne drugs, so that even delicate subjects can take them with absolute confidence. They do not depress or lower the system in any way.

DIET AND GOUT.

There is scarcely any subject that gives rise to more discussion, or, at times, proves more perplexing, than the all engrossing one of foods and drinks suitable for the goutily inclined. Popular opinions on this subject are so often quite erroneous that it will be welcome news to you that a booklet has been recently published dealing with the whole question of diet in a clear, authoritative, and comprehensive manner.

No difficulty in future need arise in arranging pleasant, varied, and satisfying menus, made up wholly of uric-acid-free dishes. Classified lists are published of allowable and non-allowable foods, and the booklet forms a perfect guide for the gouty. It contains, in addition, a mass of useful information on the whole subject of uric acid disorders.

A copy will be sent, post free, on application, to the sole makers of Bishop's Varalettes, Alfred Bishop, Ltd., Manufacturing Chemists (Est. 1857), 48 Spelman Street, London, N.E. Please write for booklet N.

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LITERARY REVIEW

By R. A. SCOTT-JAMES

"The Place-Names of England and Wales." By Rev. James B. Johnston, M.A., B.D. (Murray.) 15s. net.

Any man who loves walking tours, anyone, in fact, who takes an intelligent interest in his own locality will find untold wealth of information in Mr. Johnston's volume. Most of the place-names of England, whether they be the names of town, village, river, hill, or bog, have their long historical association and their origin—their interesting and baffling origin. Mr. Johnston dispels many long-treasured illusions. The termination "Caster" or "Chester," for instance, is no proof of the former existence of a Roman camp. "Oxford" has probably nothing to do with "Oxen," the first part of the word being the old Celtic *uisc* (meaning water), and is thus not only the same word as *Ouse*, but also *Isis*. The arrangement of names is alphabetical. If we refer to this work carefully we may follow the place-names of England to their probable Celtic, Saxon, or Scandinavian origins, and learn at the same time much about language, history, and geography.

"A Life of Robert Cecil, First Earl of Salisbury." By Algernon Cecil. (Murray.) 12s. net.

It would be hard for us to conceive modern England without the family of the Cecils. It has handed on an intact tradition from the time of Lord Burghley, and his son, Robert Cecil, the first Earl of Salisbury, down to the late Lord Salisbury and the Cecils of to-day. Mr. Algernon Cecil himself is essentially one of them. He has the characteristic breadth of mind and grasp of affairs, the sense of the constitutional order of things, and its importance, the shrewdness, the subtle feeling of what is fitting and not fitting, along with the humane traits which have been developed in some members of his family—an interest in religion, in literature and the subtleties of psychology.

He has been able to understand Robert Cecil, the first earl, and show him from within and without. I doubt if anyone else would have made so interesting a book out of so uninspiring a subject—so uninspiring, indeed, that no biographer has hitherto attempted the task, though for fourteen critical years he was practically Prime Minister of England. Queen Elizabeth, Essex, Raleigh, Bacon—these are the alluring figures whom the biographer loves. But Lord Burghley and Lord Salisbury—what were they? Bureaucrats, employers of spies, wielders of patronage—the indispensable but uninteresting props of Crown and State. But not uninteresting in Mr. Cecil's hands. He has not been content merely to ransack the Record Office and the archives of Hatfield House. He has studied this industrious administrator with the coolness of a Machiavelli examining the methods of maintaining a principality.

"The Great Age." By J. C. Snaith. (Hutchinson.) 6s.

Mr. Snaith has been as bold as the most romantic of novelists may be. He has not merely introduced Queen Elizabeth, Francis Bacon, Cecil, Raleigh, etc., but the far more remote and difficult character of William Shakespeare. The fantasy is ingenious and neat. A young heiress of incomparable beauty and courage rescues from a dungeon a youth wrongfully condemned to death. She wanders with her Orlando over the fields and woods of England till, in the city of Oxford, she meets for a second time one William Shakespeare. How she comes to act the part of "Rosalind" in "As You Like It," and how Shakespeare constructs a play setting forth the fortunes of his protégés, and recites the story to the Queen—all this must be left to the reader to discover. Improbable, fantastic, as it all is—as it is meant to be—it is saying much for Mr. Snaith that if he has not created a *character* for the gentle dramatist he has not made him stiff, or undignified, or bookish, or ridiculous; in fact, he has outlined something into which the part of Shakespeare might be fitted.

The following are novels or books of stories to which I should like to call the reader's attention.

"The Empty House." (Short Stories). By Algernon Blackwood. (Nash).

"The Good Soldier." By Ford Madox Hueffer. (Lane.)

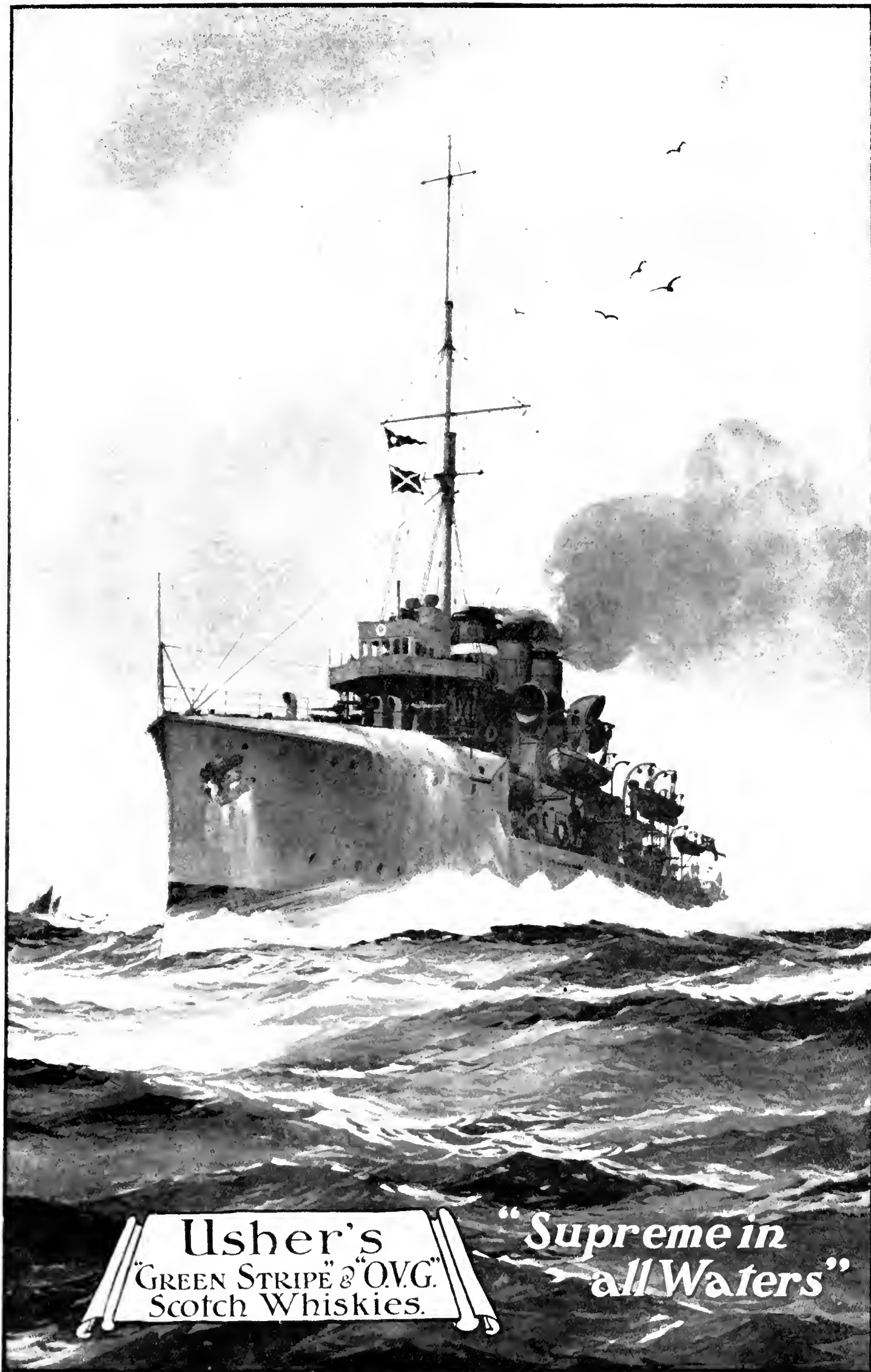
"Brunel's Tower." By Eden Phillpotts. (Heinemann).

"The Voice of the Turtle." By Frederick Watson. (Methuen).

"The Family." By Eleanor Mordaunt. (Methuen).

"The Titan." By Theodore Dreiser. (Lane).

"A Lover's Tale." By Maurice Hewlett. (Ward, Lock).



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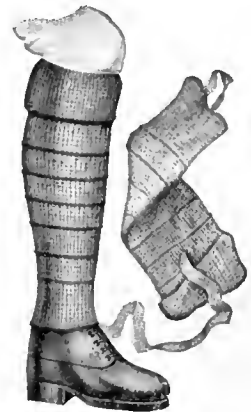
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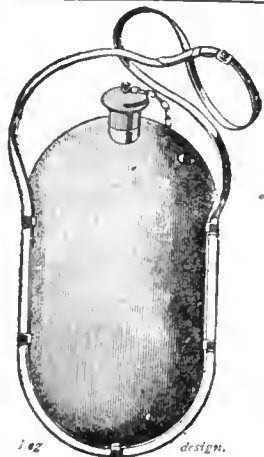
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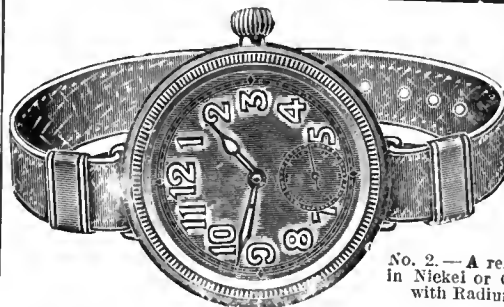


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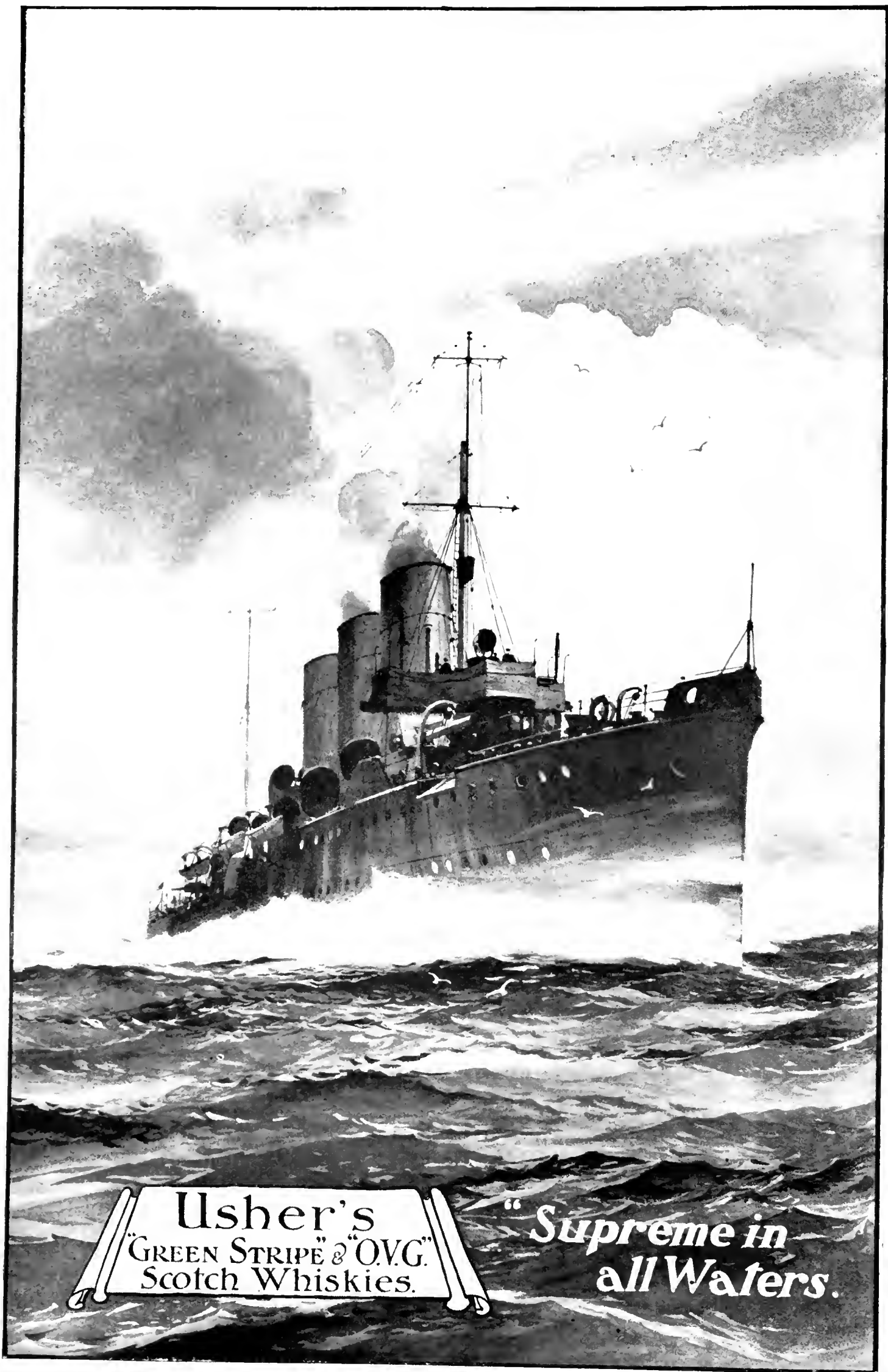
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A GLIMPSE OF WAR

6-in. Q.F.

By W. L. GEORGE

CORPORAL QUADRING, at the telephone, stared into the feeder, so dark and mysterious as it passed through the floor of the turret into the ammunition room. There was a noise of machinery in his ears and yet he was alert, quiet, at his ordinary business. His free ear, aloof from the insinuating sound that the carrier made as the shells slowly travelled and rose in the feeder, aloof even from the rumble and crackle of the distant firing which he heard when the cupola rose, was given to his lieutenant who sat there, three feet away, still as a wax figure, listening at that other telephone linked with the heart of the fort, the fire control. He had nothing to do but just to listen and to wait for sounds, for orders, for events in this atmosphere of strange business. The fire was slow, three shots a minute only. And automatically, from time to time, as the little voice below said: "Steady!" he replied: "Steady!"

Nothing was happening yet, but he knew that something must soon happen. Things were not going well with the fortress. He wondered where the French were, whether that field artillery on the right could be theirs; he wondered why in those bursts of sound when the cupola rose he heard so little musketry. No doubt the Germans were within five miles. But then? Why were they not yet being battered? He was lost in the enormous strife. The lieutenant was talking now:

"Control! D'you hear me? Control! . . . Yes, sir! . . . Aeroplane wrecked? . . . What shall I do, sir? . . . Yes, sir."

Then to the sergeant:

"Range nine four fifty." And to Quadring: "Speed up."

"Speed up!" cried Quadring into the telephone.

The machinery went a little faster. Slowly before his eyes a shell rose in the black void, harmonious, beautiful in lines, exquisitely polished. As he listened he stared at the sergeant, grizzled but alert, watched the shell slide into the hands of four men and travel as if on velvet towards the breech: quick-opened, it swallowed the shell, snapped it up like a greedy mouth. He saw the sergeant push aside a gun-layer, infinitesimally alter the direction.

"Speed up!" said the lieutenant, sharply.

They were firing four a minute now, rather blindly towards that place where the German howitzers might be, to show that the fort was fighting rather than to fight. Then the small shell began to fall. . . .

Corporal Quadring listened, interested and calm. He knew the sound: every fifteen seconds, when the cupola rose, he recognised the Krupp fifteen-pounders. "Small fry," he thought, disdainfully. He did not know where they were falling; hidden in the circular chamber of steel that whirled under his feet, the small, crowded room, intolerably light; he felt comfortable and secure behind the walls of grey metal. The lieutenant was talking again. Quadring understood: another aeroplane had located the howitzers. The range was altered.

"Speed up! Speed up!" said the lieutenant, authoritative rather than impatient.

They were firing at twelve-second intervals now, and there was a gritting sound. It bothered him, this sound, so near him. It dominated the more frequent bark of the fifteen-pounders outside. Where were they falling? . . . They sounded nearer now. Then Corporal Quadring heard a large splosh. Oh, they had hit the glacis then! "Fluke," he thought. But there came another shell and then, as the 6-inch fired again, two or three simultaneously, quite close: shrilling through the explosions he heard a cry. He grew taut: "That must have been on the infantry parapet! Poor devils!" thought Corporal Quadring. And then smugly reflected that he was better off inside. Still, the sound worried him. Ah! this was it.

"Oil can," said the sergeant.

"Oil can," repeated Quadring, through the telephone.

"Oil can," said the little voice.

And, as if by magic, the oil can rose in the feeder. A note of excitement had come into the lieutenant's voice: "Yes, sir, I understand." Then to the sergeant: "Nine one fifty. Get all you can out of her."

Quadring's heart gave just one beat more and then became normal. They were in for it now.

Suddenly, on his order, the feeder came alive. It rasped

and it whirled, running at top speed, for indeed the quick-firer was giving all it could and the four men seemed to seize the new shells as fast as they fed them. Corporal Quadring was all bewildered outside that calm spot where lay his duty. His first excitement increased, for at last . . . Yes, here it was . . . a dull heavy sound upon the cupola; the Germans had the range, unless it was another fluke. . . . No, not a fluke: as the cupola closed down two shells fell together on the steel roof. The lieutenant smiled:

"That's the first," he said, "but we . . ."

Corporal Quadring did not hear the rest, for this was not a fifteen-pound shell that had fallen so close over his head that he sank it into his shoulders. The whole turret had quivered under the heavy impact. And now it was indeed: "Speed up!" Hands were feverish as they grasped the shells . . . for the turret had begun to move . . . the cupola rose . . . the 6-inch fired into the gleam of blue sky. The cupola blotted out the blue sky and, rumbling upon its rails while with a swish water escaped from the pipes, the turret moved along the trench to take up a new position. It could take no risks now. . . .

In front, behind, Quadring heard the explosions. Yes, they were being battered now. The gun was pushed to its utmost, it seemed; the sergeant in one movement tore off his coat, wiped his face upon his shirt-sleeve. And yet it was not fast enough.

"Speed up! Speed up!" shouted Quadring.

The lieutenant murmured: "Too slow! Go below, give 'em hell!"

It seemed curiously cool and dark below. The store-keeper was sulky, hardly listened. Quadring just noticed the wounded hydraulicist who had been hit in the trench and brought in, rather to clear the rails than to save him. He lay, a small khaki bundle, folded up as if to get him out of the way, under a mask of red, his coat black-dyed with blood, half-stunned by a scalp wound.

Then from above came a sound heavier than he had heard before, a vast boom, and for a second everything tottered as if the wall and the feeder itself swayed. The turret shook like a man who has been struck. "Got us full!" he thought, while he stumbled up the stairs tripping on the iron treads, shying back from the electric globes like a nervous horse. Above, all was urgency and yet calm. Still the feeder was belching shells, still the cupola, a little askew from the blow of the eleven inch shell, rose and fell as the quick-firer replied. He was seized by movement . . . minute after minute passed, lengthened into an hour of heat and fire. . . . He was conscious only of the swaying of the turret as it rushed along its trench, fired, rushed back and fired again. It was all action, it was all haste, mechanical as if the men with the gun and the steel walls formed an automatic trinity. Sound was all about him like a black blanket shot with red streaks. Every rise of the cupola let in the growing roar of the German guns, like a wedge, then closed it out. He felt rather than heard the sound grow. He understood. Nothing would help them, now their range was found, save perhaps some lucky shots unlimbering those howitzers hidden behind hill 44 or 45, or, he thought bitterly, 48, who could tell?

He exclaimed. As the cupola rose a shell burst on the edge of the work and for a second all was invisible, for the turret was filled by a cloud of concrete. Corporal Quadring retched a mouthful of dust . . . fierce, he forced his stung throat, murmured:

"Speed up!"

Thicker and thicker came the sounds. Boom upon boom ringing on the cupola. "It'll buckle," he thought. Then again: "It'll buckle." And as he thought the voice below spoke:

"Bearings jammed!"

"Go on," said the lieutenant.

The gun still raged into the strip of sky; the cupola was doomed and would soon protect it no more. Right, left, fire . . . then left, fire and right again . . . the turret, half-exposed, was fighting still. But a heavy shell fell upon the edge and suddenly the three inches of steel bent, crumpled like a fan. Right, left . . . then a pause. It synchronised with the bursting of a shell in the trench itself. Quadring knew, he could imagine the rails and roadway twisted up: the turret would never move again . . . it would only wait. Wait? For what?

(Continued on page 100.)



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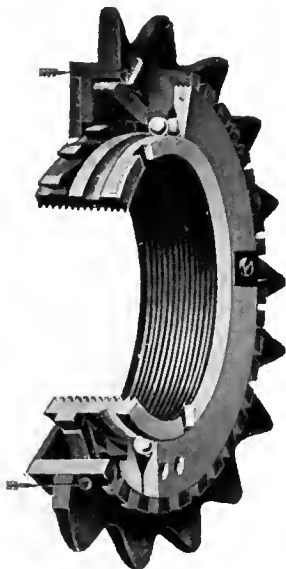
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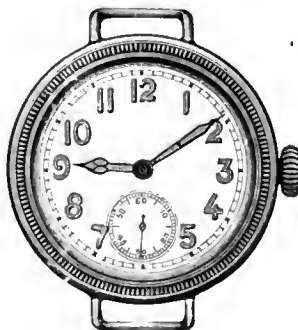
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THE WAR BY LAND.

By HILAIRE BELLOC.

NOTE.—This article has been submitted to the Press Bureau, which does not object to the publication as censored, and takes no responsibility for the correctness of the statements.

In accordance with the requirements of the Press Bureau, the positions of troops on Plans illustrating this Article must only be regarded as approximate, and no definite strength at any point is indicated.

THE AUSTRO-GERMAN BLOW IN WESTERN GALICIA.

THIS issue of LAND AND WATER will be in the hands of the public upon the morning of Thursday, May 6. It is probable that by that time the main truth about the Austro-German blow delivered in Galicia, which took place upon Friday, Saturday, and Sunday last, April 30, and May 1 and 2, will then be public property.

But at the moment of writing this article (which is Tuesday evening) there is nothing upon which to base a judgment save analysis from past news of a similar nature. It is an unfortunate

coincidence, for the purpose of this analysis, that the first and imperfect news received from one side only should be all that we have had in London before the main part of this article can be completed. But it is unavoidable. If further news correcting the first German communiqué is received in time for the addition of a postscript to-morrow (Wednesday) morning I will add such a postscript.

First of all, we can make certain of the following points:—

(1) There has been a long concentration of enemy troops against the Dunajec front. That is, against the positions of our ally upon the extreme west of their armies in Galicia.



(2) This concentration was not effected secretly. The Intelligence Department of our ally warned their commanders of great numbers massing against them for the attack.

(3) It is certain that the force thus concentrated contained great numbers of the new troops which, as has been pointed out in these columns more than once, constitute the third and last batch of enemy reserves.

(4) It is equally certain that the concentration thus effected and thus launched upon the western front of our ally's positions in Galicia resulted in a considerable success for the enemy.

(5) It is equally certain that the enemy, in thus forcing certain points of a line entrenched and prepared for months, has lost very heavily indeed, and that *unless* he has quite broken through he has lost more than the Russians.

(6) But he has attained a measure of success, to be estimated probably fairly enough in his figures: 21,000 wounded and unwounded prisoners of the enemy and 16 guns; out of a force of, say, 200,000 to 250,000 and, say, 800 guns.

(7) According to the measure of that success—i.e., according to how far he has pushed back the Russian line—will prove the gravity of the position immediately developing. In any case, unless our ally's old line is restored, his grip upon the northern Carpathians is threatened, and if the blow he has suffered is as heavy as the enemy pretends (which is not likely) he could not permanently retain his hold upon the mountains at all, and might not be able to maintain himself in the Galician plain.

In order to appreciate what has happened, we may consult the elements of the sketch map on the preceding page, and reproduced opposite.

The main line of communication running through Galicia is that marked C C C C upon the sketch, and proceeding from the depots in Russia through the advance pass at Lemberg, through the junction of Przemyśl, and through Tarnow across the Dunajec.

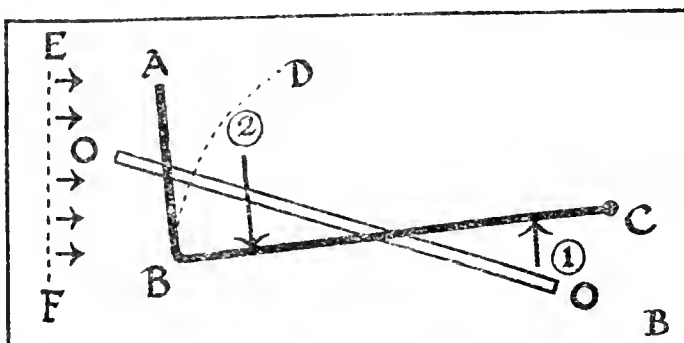
With the rest of the gridiron of Galician railways, mostly single lines, we are not for the moment concerned, save that the lateral line running through Gorlice, Sanok, Sambor, and Stryj to Stanisław and Kolomea (marked on the sketch with the letters D D D D) is obviously his main road for the transfer of troops from east to west and west to east: in other words, for the concentration of the Russians against attempts their enemies are making to dislodge them from the Galician plain.

Now, the position which the Russians held, just before this great attack upon their western front was delivered, is to be followed in the line of dots upon the sketch map A.

It will be perceived that the frontiers of the Russian occupation were roughly in the shape of a right angle; from between Stryj and Stanisław to the neighbourhood of Bartfeld on the Hungarian side of the mountains was one limb of this right angle, and from the corner in the neighbourhood of Bartfeld up to the Vistula was the other, and shorter, limb of the angle.

Upon the power of resistance of this shorter limb, which power of resistance was taken for granted till the last few days, it is clear that the possession of the Carpathians by our ally depended.

The matter is so obvious that most critics in the Press have said, rightly enough, that a mere



glance at the map would be sufficient to prove it. But to make quite certain of the point, we may put it diagrammatically here. Thus, an army desires to master a certain obstacle, O O. It is disposed in a rectangular form, A B C. Its enemies are exercising the power for a thrust against it towards C (represented by the arrow there), but it has been exercising an equally powerful thrust at the B end (represented by the arrow there) and has there crossed the obstacle in part, and can, with the advance of the season, hope to master it entirely.

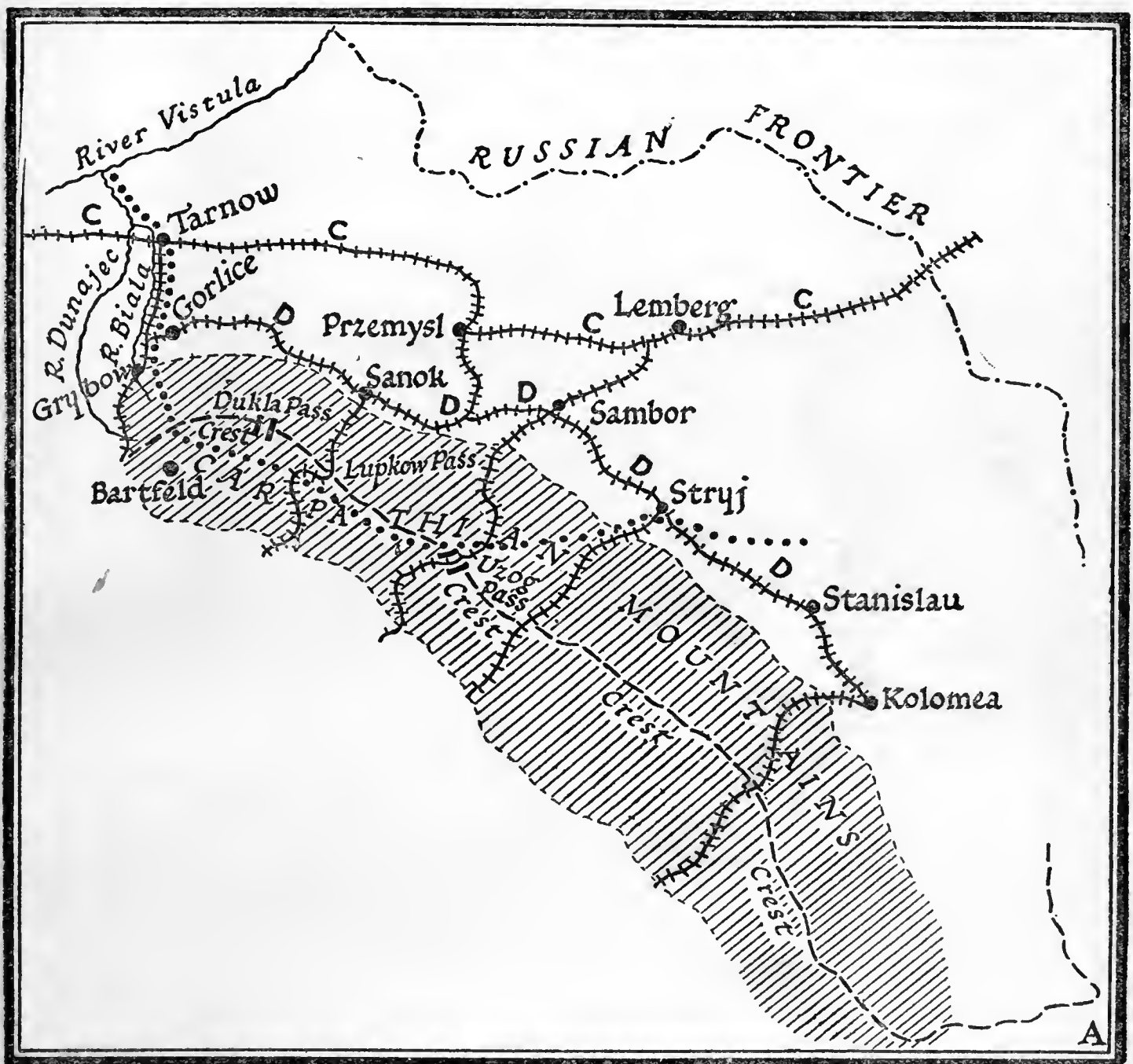
There is also, in the direction E F, a certain number of enemy forces able to strike against the turned back side A B. It is self-evident that the security of all the work being done on the line B C depends upon the force there operating being quite secure from interference on their right and adequately screened by the force at A B. If the force at A B is broken, or bent back, the people going along the arrow 2 will be in peril, and, as the country in which they are operating is mountain country, and has few roads, and very difficult communications, A B has only got to be bent back some little way as towards B D for all the people who are working on the thrust of the arrow 2 to be in grave peril of being cut off, and, in a military sense, destroyed.

Now we shall know, perhaps by the time these lines are in print, but unfortunately not at the moment they are written, how far this protecting line A B has suffered. That it has suffered, and had dents knocked in it here and there, we may take without fear of error.

The Berlin communiqués were, on the face of them, extravagant, and the public rejoicings ridiculously on a par with the premature celebrations of victory before Warsaw last December.

But however exaggerated enemy reports may be, serious fighting has taken place, and the enemy has advanced.

If we turn again to the first map reprinted opposite we shall see that this claim of the Germans, apart from its flamboyant language, is one which is not made without foundation. They would not say they had forced the Dunajec unless they had forced it at certain points, and they would not say that the enemy was retiring eastwards unless he were also retiring at certain points. The Russian line was simple and united. It was based on one continuous line of river, and if it is pierced at all it may have to fall back. The original line ran from the Vistula up the Dunajec until the junction of the river with its tributary, the Biala, and thus ran from Tarnow up the Biala in front of Gorlice, past Grybow, and so to the Hungarian frontier, which is on the crest of the mountains, just above Bartfeld. That line no longer, at the moment of writing, stands intact. We have a further claim to regard the matter as serious from the very fact that we have received no news from the other side,



although it is now nearly three days since the matter was decided, or, at any rate, more than forty-eight hours. And we cannot but remember that similar silence has marked difficult passages upon the Eastern field in previous months.

On the other side of the account we must set certain considerations of which the immediate future will test the value, though we cannot yet tell whether they are of great weight or of small.

We know, in the first place, that Berlin has invariably exaggerated in the last few months the successes of the German troops and has been particularly prone to lend decisive value to what have been proved in the issue to be subsidiary things—for instance, the fighting at Soissons, and the destruction of the 20th Russian Army Corps at Augustowo.

Again, we know that the moment is extremely critical in the matter of neutral intervention. At any moment one of the greater neutrals—Italy—and possibly another—Roumania—may enter the field—with results which will be suggested later in this article. There is not the least doubt that, at such a critical moment, it will be well worth the while of the enemy to exaggerate his success, and particularly to give it a sort of lurid character which would impress foreign opinion.

Again, we know from the example of what

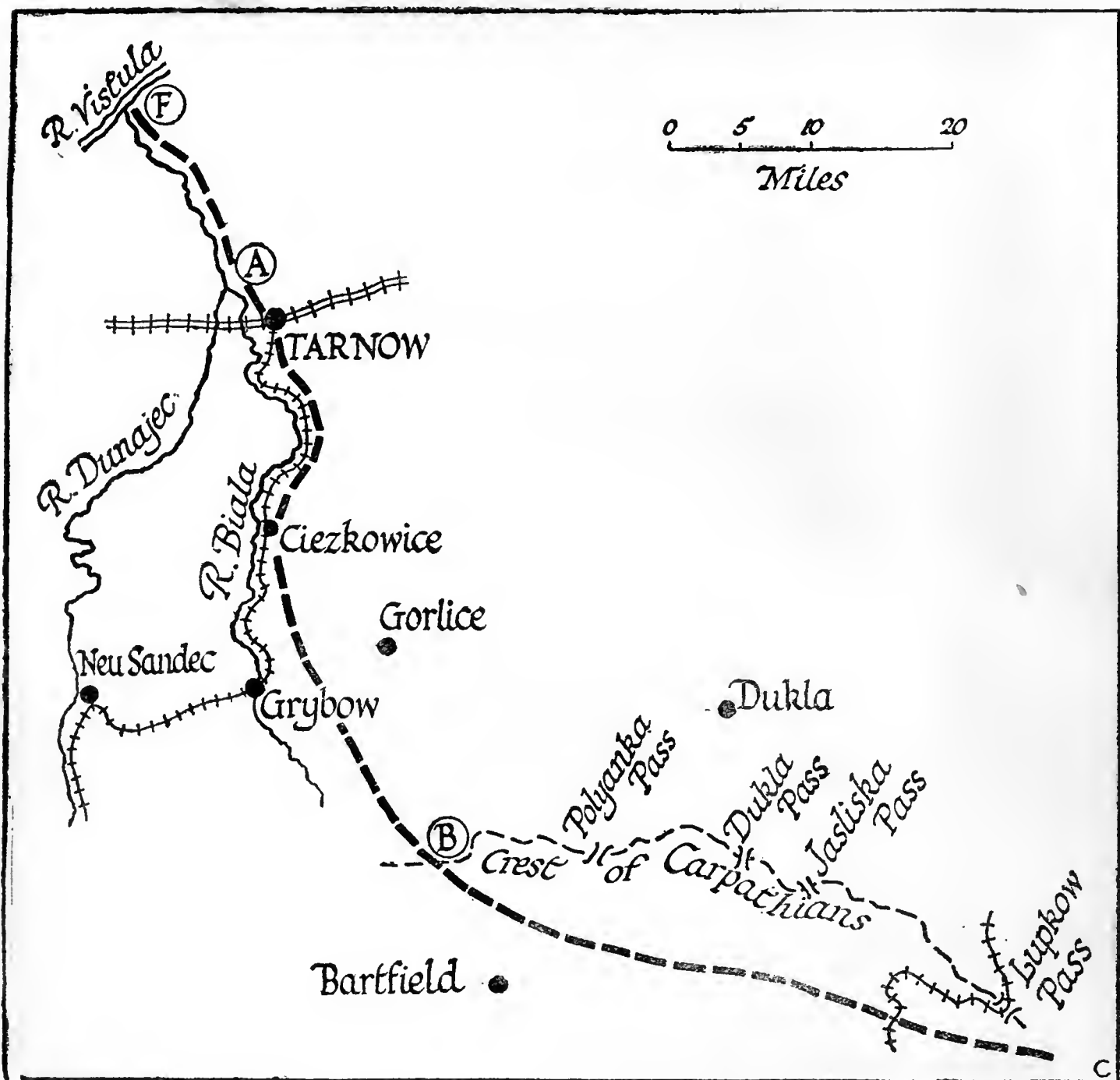
happened in front of Warsaw, last December, that if the position is still undecided, it may yet be retrieved. Berlin has in the last few months been in the habit of crying Victory at the very first opportunity it could find, and always before things were concluded.

In front of Warsaw the Russian line was pierced, and it seemed as certain as anything could be that Warsaw would fall. In spite of that, we know Russian reinforcements arrived, the breach was healed on the second day, and not only was the breach healed, but the Germans, who had broken through, were very nearly enveloped and only cut their way out with the greatest difficulty.

We are not yet justified at the moment of writing, therefore, in regarding the success which the enemy certainly has had as either being upon the scale he claims or of the decisive character which he also claims: but we shall do well while waiting further news to appreciate how very critical all that corner is.

Upon the rough sketch on the following page you have the elements of the situation.

The Russian line runs from the Vistula up the Dunajec to the point A; it is continued through Tarnow, reposing upon the River Biala and the railway which follows that valley. It passes—or, rather, passed—through Ciekowice (upon the



eastern side of the valley, and already in the foothills of the Carpathians) and went on up into the higher hills between Grybow and Gorlice, and then crossed the crest of the Carpathians about half-way between the towns of Gorlice and Bartfeld. It held the whole belt south of the crest of the Carpathians within the mountains themselves, as we know: the three road Pass of Polanka, of the Dukla Pass and of the Jaslika, and the railway and road Pass of Lupkow, after which point it held a very narrow belt of the southern slope and, a few miles further on, no longer held the ridge of the Carpathians, failing as yet to master the Uzog. Now, the protecting front between the point B and the point F, where the Dunajec falls into the Vistula, the Western Russian line, based upon the Dunajec and the Biala, has apparently been attacked at various points upon its whole length; most seriously at Cieczkowice, and elsewhere below Tarnow and on the lower Dunajec. The communications with the Carpathian pass, which the Russians still hold, are only one long day's marching behind this protecting screen of the western wing; and if that wing cannot be re-established quickly it is obvious that the positions between the point B on the accompanying sketch and the Lupkow Pass will become impossible.

The actual position on which the enemy claims (in the Austrian communiqué, at least) to have struck his chief blow is, as we have seen, that which defended the town of Cieczkowice. This town is upon the Biala, just in the foothills of the Carpathians where the hills have summits from three to four hundred feet above the level of the water. It is not difficult country, nor is it a point lending itself in any particular way to the attack. If the Russian line broke there (which is still doubtful), it was merely a break in one place out of many that might have gone under the strain. The real interest will be here, as everywhere else on the line, to know how far back the Russians fell. Gorlice (see plan C1 on next page) is about 10 miles to the south-east, and the positions behind the passes—the points from which retreat through the passes could be cut off—rather more than 20 and less than 30 miles in the same direction.

With this said, we are unfortunately compelled to close our analysis midway, because we have for the moment no further material. We do not know whether the blow struck is a final one—that is, whether it has produced an irretrievable effect and pushed the Russians right back, or whether the whole position may be restored by the arrival of Russian reinforcements.

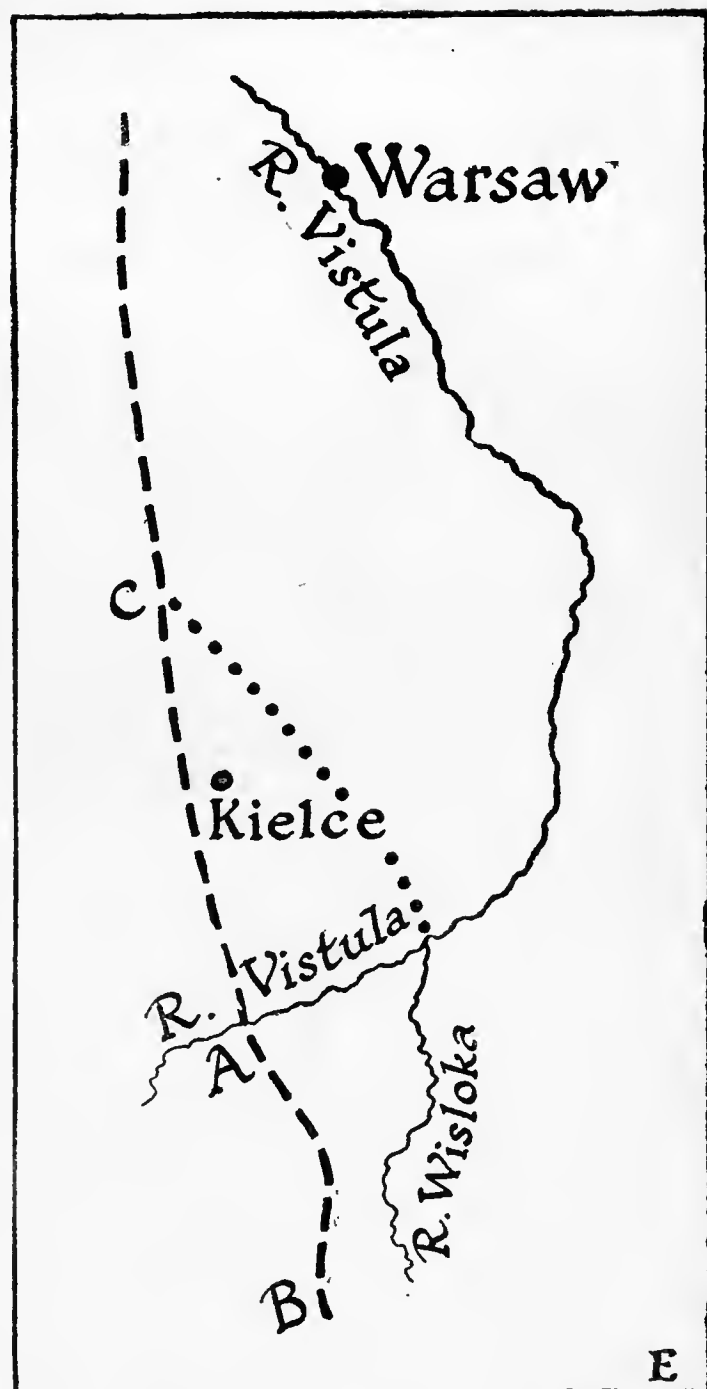


We are similarly ignorant as to whether if this decisive effect has been produced the falling back of the line has been sufficient to endanger the positions on the Carpathians.

It is unfortunately certain that behind the line there is no immediate further position to be easily taken up. After the line of the Dunajec



and the Biala the next defensive position is that of the Wisloka river, which passes through Jaslo on its way to the Vistula. But the River Wisloka is a long way behind the Dunajec-Biala line, peri-



ously near the Dukla, and at Jaslo actually across the communications of the Polyanka Pass.

It will hardly be possible, while hanging on to the Wisloka line, to protect the hold upon the Carpathians which the Russians now have. It is too far retired. The accompanying little sketch D shows the proportion of distances involved and the relation of the old line to the new, supposing that new one to be taken up upon the Wisloka.

There is a further very unpleasant effect following upon this blow if it is nearly as decisive as the enemy pretend, which is that the line north of the Vistula will also be partly bent back. At present—or, rather, just before this blow was delivered—the relation of the line to Warsaw and Russian Poland was roughly what is shown marked with dashes upon the accompanying sketch E, and in that the portion south of the Vistula A B represents the Western Galician front, which the enemy has just been hammering. But if it is necessary to fall back even further than the Wisloka line it would mean that all the northern part A C beyond the Vistula would have to fall back very heavily, and very hurriedly, as along the line of dots, into a position probably not prepared, abandoning the important town of Kielce, and leaving too narrow a belt altogether between the foremost positions of our ally and the Vistula river. But, I repeat,

there is no determining the thing at all until further news is received, only awaiting that news we must be careful not to belittle too much the enemy's claim. He has done something certainly unexpected, certainly of considerable moment, though not, so far as we now know, either decisive or upon the scale which his rumour warrants.

THE PROBLEM OF THE DARDANELLES.

In order to understand what has happened in the Dardanelles we must first of all seize the heart of the problem, which is the mastery of the Narrows.

There is indeed much else besides this capital matter.

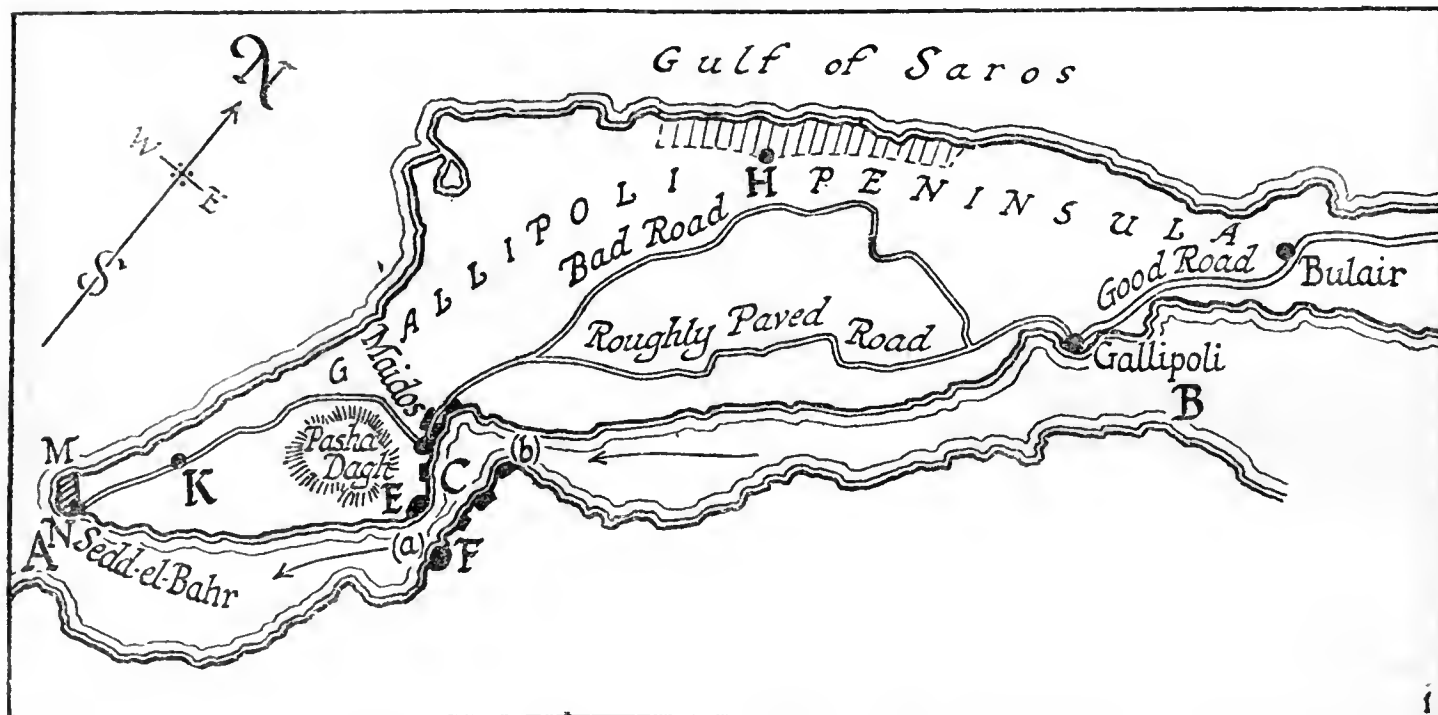
of the Narrows, may on occasion go as fast as four knots and runs upon an average at two.

The large permanent works all stand round about the two sides, the European and Asiatic, of the Narrows, round the two projecting capes, that upon the European side at E being known as Kilidbahr and that on the Asiatic side as the town of Chanak at F. The projecting tongue of land covering all the European side of the Straits is known as the Peninsula of Gallipoli. Its narrowest point is at the Isthmus of Bulair.

This tongue of land has certain features, which it is important to note carefully if we are to grasp the main problem.

I will tabulate them in their order.

(1) It is, topographically, a somewhat confused tangle of hills which commonly rise to sum-



The enemy can establish temporary batteries; he can, as we know from past and unfortunate experience, devise unexpected forms of attack against the ships advancing along the waterway.

But the pith of the whole affair is the mastery of the Narrows, because there, within a comparatively small area, are established the permanent works and the large guns which make the action of the fleet so difficult.

It is true that torpedo tubes under water and floating mines and, as I have said, the temporary batteries could molest the fleet even if the permanent works were destroyed, but supposing these works to be destroyed, the resistance of temporary forms of offence could not last very long. If the Expeditionary Force obtains possession of the Narrows it will be able to clear both banks of any such temporary weapons of offence, and the fleet will be able to go through.

Now, the Dardanelles as a whole run after the fashion apparent in the accompanying sketch. Our readers are already familiar with the main features. In a 30 miles stretch of water averaging, say, 2 to 4 miles across, there is a gut at C a mile across at its narrowest or southern end (a) and a little more than a mile across at its northern end (b), which is the centre of resistance to any hostile passage up the straits. From the straits, running from North to South in the direction of the arrow, runs a stream which, just at the strain

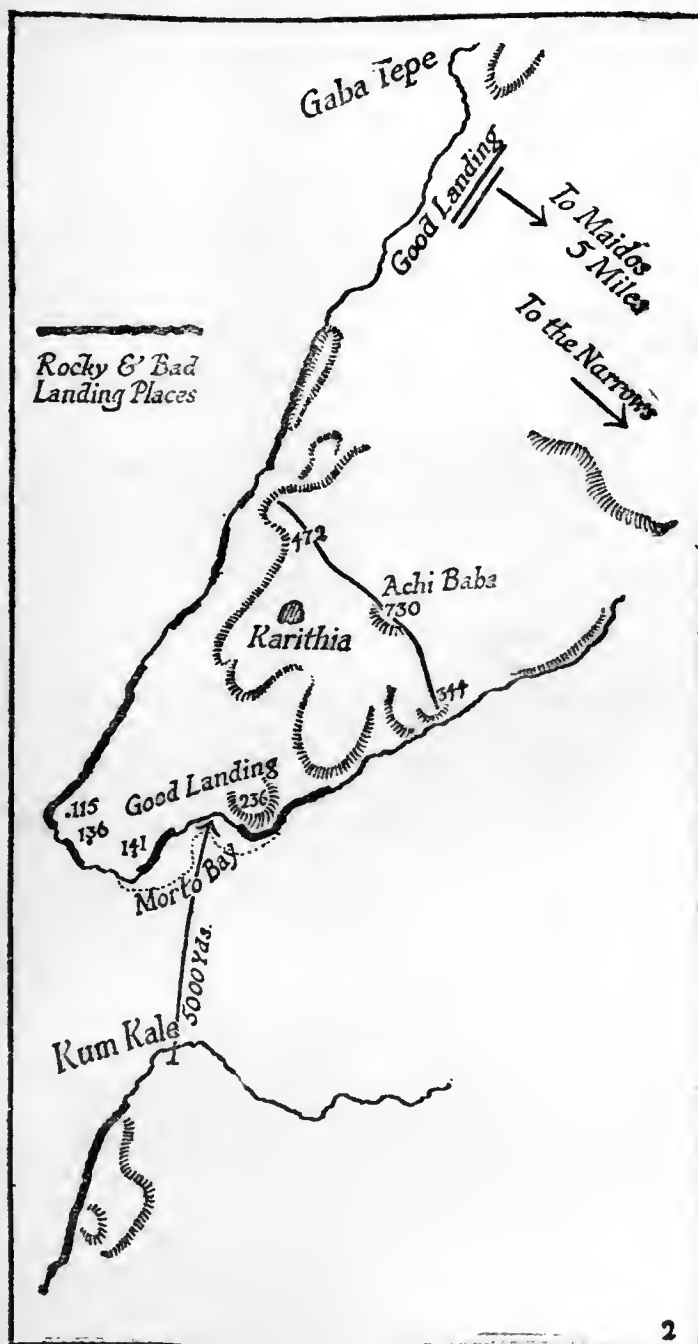
mits of 3, 4, 5, and 600 feet, but which in one long stretch coming steep on to the Gulf of Saros touch at one point, H, over 1,300 feet. It is therefore a country very well situated for the erection of temporary defences and possessed of a number of natural positions for defence.

(2) Its water supply is ample—at any rate, at this season of the year. A number of little streams run in between the confused series of ridges and summits. Nothing, therefore, is to be feared by an invading force upon that score.

(3) Its communications by land are very poor. One fairly good road runs down as far as Gallipoli itself from the North. After that there is only, running southwards towards Maidos, a road which bifurcates into two, one running more easterly than the other. Both branches are bad, the eastern, nearest the Straits, being roughly paved only.

On from Maidos to the lighthouse at Sedd el-bahr there is a somewhat better road, which bulges out towards the west through Krithia (K) in order to avoid the high plateau of the Pasha Dag, or hill of Kilidbahr.

Unless some temporary line has been laid in all these months of warning, some rough light railway or other, by the Germans, there is no artificial means of communication, and even petrol traffic would have a very rough time south of Gallipoli. There are numerous tracks up and down the peninsula, but they are tracks and no more.



The gist of all this point upon the communications is that unless the enemy has already established a considerable railway within the hills of the peninsula, apart from that which is near the permanent works of the Narrows, he will not be able to bring up a reinforcement of this sort quickly, not can he easily feed very large numbers of men. In other words, we are fighting an artillery already present and not one which can be rapidly increased.

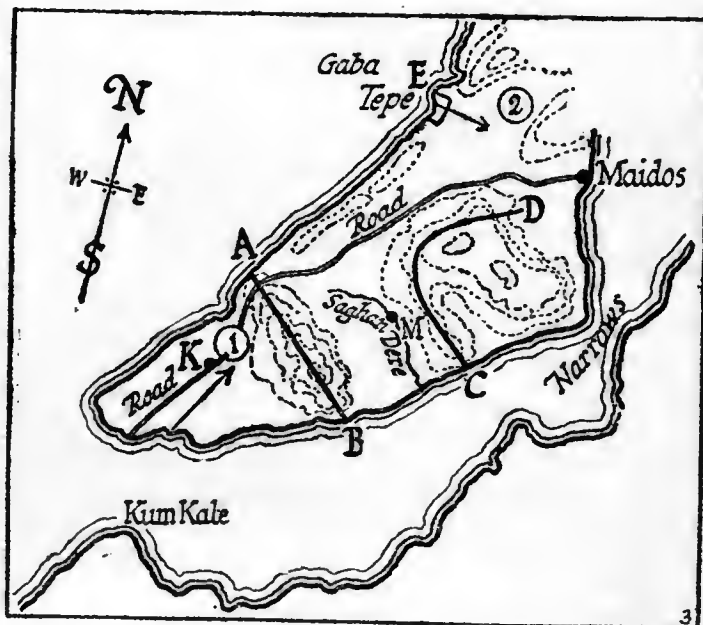
(4) Till some way past the Narrows the European side dominates the Asiatic side. Therefore, it is enough for a force to be completely master of the Gallipoli Peninsula and it can ensure the retirement, at last, of an enemy from the opposing shore.

(5) The landing-places upon the peninsula from the open sea are few and have to be carefully chosen, and this is particularly the case with regard to the southern end, where most of the coast is steep to the water and rocky.

There is here but one really good landing-place of considerable extent, which is Morto Bay. This lies at a range of 5,000 yards opposite the Asiatic mouth of the Dardanelles, the Cape Kum Kale, and therefore is under the fire of small mobile artillery from that point, which must be occupied before a landing at Morto Bay can be effected.

All along the inner side of the peninsula, between the Narrows and the mouth of the Dardanelles, are hills falling quite steep down into the water in a line of bluffs and sharp slopes—broken only by three or four valleys of water-courses.

On the side of the open sea or Gulf of Saros



there is a little more chance of landing, because the hills fall for the main part less steeply down to the water: but everywhere a landing force finds a defensive position immediately in front of it. Nowhere is this the case more than at the extreme point of the peninsula at M N, where there is a rocky little natural position between 100 and 200 feet in height, running right across, and this must be forced or turned before the landing party occupies the extreme of the tongue of land.

The particular problem of attacking the Narrows thus can be judged upon a smaller area. If we take the above sketch we shall have before us all that is essential to our judgment.

The first thing to be noted in this area is the presence of two main defensive positions for the defence of the Narrows against any force approaching from the open sea and from the south. These two positions, of which I have very roughly indicated the contours in the accompanying sketch (the exact contours are only known to those who possess confidential information), may be called the positions of Atchi Baba and the positions of Soghan Dere. I have expressed the first by a line marked A B, the second by a line marked C D. A landing having been effected upon the point of the peninsula, and the British force so landed advancing towards the Narrows in the direction of the arrow (1) will necessarily stand first well dug in along the Atchi Baba position A B. The slopes leading away from this position towards the point of the Gallipoli Peninsula are easy. They form a sort of glacis with an excellent field of fire, but they are not escarped. At K, the village of Krithia upon the only road (the one which goes round the hills to Maidos), we have the principal concentration at this moment of the allied troops, and they will attempt with the heavy pieces at their disposal for bombardment and with the numbers at their disposal for storming to carry this first defensive position A B before what will presumably be the heaviest part of the work, that against the line C D, can be attempted.

Whether this bombardment and storming will

be successfully accomplished or no, only the future can show, but that must necessarily be the first step in the operations.

It may be asked why the co-operation of the fleet cannot determine the issue—the ranges are comparatively short (the whole peninsula along the line A B is only a little over 4 miles across)—and why the Turkish line cannot be taken in reverse. The reply to this lies in the conformation of the land towards the Ægean at the A end of the A B line. There the land goes so steep down on to the sea that ships have to lie far out in order to have any effect upon the Turkish lines above.

It is none the less true that their co-operation will have a certain weight at this end, and may help so to weaken the defensive as to permit the storming of the line.

Let us grant this first position A B to have fallen—which it has not yet done. There remains the much more formidable position of the Soghan Dere, which may also be called, from the big hill round which it is grouped, the position of the Pasha Dagh.

The Pasha Dagh is a plateau with very steep escarpments upon the west, and possessing a southern outlier, also with very steep escarpments, which overlooks the valley of the stream Soghan Dere and the village of Maghram (M). These escarpments, at the southern or C end of the bent line C D, run to about 600 feet in height, at least their chief summits are of that elevation.

The slope is about that of one of our chalk escarpments at home, like that of the Cotswolds, for instance, above the Severn Valley, or that of the Surrey Hills upon their southern side.

The position is thus a formidable one. And even if A B is carried, C D may give the Expeditionary Force a task greater than it can perform.

Meanwhile, with command of the sea, there is still the possibility of the last and stronger line C D being turned. For this to occur it will be necessary for a separate force of the Allies to advance successfully towards Maidos (along the arrow 2).

The British have already landed a force at E (Gaba Tepe), which occupies an entrenched position upon the flat of the seashore, and will be ready to co-operate against the northern or right flank of the entrenched Turkish position C D when occasion serves.

But it cannot move, of course, until the pressure upon the enemy from the south becomes very serious. For the forces are too evenly matched to permit of a comparatively small and isolated detachment risking itself until the enemy is engaged heavily as a whole.

When that engagement takes place, however, it would seem certain that an advance from E towards Maidos will be undertaken. The country between the two is easy. The advance can be supported by fire from the sea (the whole distance across the peninsula from the open sea to Maidos being not much more than 8,000 yards range) and the road between the open sea and the Straits rises not much more than a hundred feet.

If the Expeditionary Force should succeed not only in storming the first defensive line, the Atchi Baba line A B, but also in breaking the second defensive line C D and establishing itself upon the Pasha Dagh, then the permanent works in the Narrows would be at its mercy, and that for the following reasons.

(a) It would have swept free of concealed

batteries and submarine torpedo tubes (if such have been established) all the shore of the Dardanelles up to the Narrows.

(b) It would be in possession of the dominating heights upon the European side, which would at the worst keep down the fire of, and at the best completely clear, the Asiatic shore.

(c) It would have the permanent works on either side of the Narrows at its mercy, and this particularly from the fact that the Expeditionary Force has at its disposal very numerous air machines, which are a weak point in the enemy's equipment.

Indeed, did the Expeditionary Force succeed in setting foot permanently upon the plateau and summits of the Pasha Dagh, the main task of this difficult venture would have been accomplished. The ships could freely use all the lower Dardanelles up to the Narrows, and the only fear would be that of drifting mines. There would be no fire from either shore.

As to what has been actually accomplished of this task so far, one can only give the most general lines, because the details since more than a week ago have not been given us, at least at the moment of writing (Tuesday evening), but the following points are clear.

(1) In order to use the little bay marked F upon the accompanying sketch (called Morto Bay), which is controlled by fire from the point G on the Asiatic side (which is the Cape of Kum Kale), the latter point had to be occupied.

The French—only a division of their Colonial troops were employed—developed a strong attack upon the whole of that ground, which is, by the way, the Plain of Troy and the scene of the Iliad. This attack was a feint, and while they were doing it a portion of the force, screened by the attack, entrenched themselves on Kum Kale. The forward bodies in the Plain of Troy then retired, remaining in occupation only of the extreme point G, from which the opposite bay F is threatened.

But upon the security of this bay depended the landing of the Expeditionary Force on the extreme of the Gallipoli Peninsula, because there lay, as we have remarked, a good defensive position along the end of the Gallipoli Peninsula below the point where I have marked the double line M N.

With the landing of the bay thus covered, this defensive position was turned and the invading force could advance up the main road to Krithia at K, where apparently it lies at the moment of writing.

A further advance along the Asiatic shore would be quite useless and will presumably not be attempted, and all that we have to watch is the progress and, let us hope, the success of the assault upon the first enemy position of Atchibaba, A B.

It should be said in closing this department of our subject that the Turkish communiqués with regard to all this piece of fighting have been very unreliable and that the German conclusions drawn therefrom are certainly too optimistic.

The task is an exceedingly difficult one, it may well end in failure, but it has not so far proceeded upon the fantastic lines indicated from Berlin; and the critics of the campaign in the German Press, whose opinions have been quoted, are altogether too confident of the result—or, rather, altogether misread the extent of the progress already achieved.

It is further necessary to reiterate the very

elementary point which was as true of the first attack that failed two months ago as it is now: the ultimate success of the Allies will depend more than anything else upon the *number* and *calibre* of their heavy pieces—that is, of their siege train. If both are sufficient they will succeed; if insufficient they will fail. For both the preparation of the attack upon the two main positions, and—given both attacks to be successful—the reduction of the permanent works of the Narrows will depend upon the big gun and the big howitzer.

THE HINDENBERG METHOD IN THE WEST.

The fact that Field-Marshal von Hindenberg was present in the West, during the recent violent attack upon and failure against the junction of the British and French lines north of Ypres, might seem to indicate, to the student of this war, the appearance in the fighting in Flanders of certain features with which that name has made us familiar in the East.

It is not well to exaggerate the effect of any one man in general operations of this kind. The commanders of the German armies in front of Dixmude, Ypres, and Armentières will retain to the full their responsibilities and know the war in this quarter after so many months in a fashion forbidden to von Hindenberg, even if that aged and successful General be put directly over them. That he has thus been put in direct command is doubtful enough. It is more likely that he was sent into this field merely for the effect that his name might produce, and that he did no more than inspect.

But let us take the point for what it is worth, and ask ourselves what the method of this Commander has been in the East.

It will not lead us to the expectation of any startling novelties upon the Belgian front.

Von Hindenberg's point was a careful study of the Masurian Lake region upon the southern and eastern boundaries of East Prussia. Using his local knowledge, not to say his hobby, in the early part of the war, he did achieve a very striking success against the Russians at Tannenberg. He enveloped with a force, possibly inferior, certainly not largely superior, the Russian Army of invasion and nearly destroyed two of its army corps out of five—thoroughly defeating the whole.

Since that success he has had in the eyes of the civilian German nation a label attached to him which the German Government has used for all it was worth. His name alone heartens Berlin—and, for that matter, the rank and file of the troops—whenever it is mentioned; and therefore the presence of von Hindenberg is expected to work a miracle.

But all that has nothing to do with either strategy or tactics, and what this Commander has done in point of fact since his local and very striking success for his country on the Masurian Lakes, has not perceptibly differed from the action which we can predicate of any Prussian General officer acting anywhere.

He has massed men with successful secrecy. He has used them, once concentrated,

in the battering ram fashion. He has been so rapidly dependent always upon the tactical trick, and it his service, with its enormous wastage, and it he has failed. His use of the railway system behind him in the East was nothing either original or unexpected, and if he has any say in what is going on, or to go on in the immediate future in the West, he certainly does not mean enveloping movements such as those which he practised in the East, because in the West those are not possible. It means no more than what we have already seen, unexpectedly rapid concentration, an unexpectedly heavy blow (delivered at enormous expense) upon a selected point and hitherto, on the Bzura, at Przasnych, the checking of that blow before it has had any definite effect.

There is no other feature in the Western fighting worth new comment this week, unless it be the dropping of bombs upon Dunkirk. That piece of futility will stand in the history of this war in the same category with fifty others. There is nothing remarkable in discharging a large missile over the trajectory involved. Anyone can work out a ballistic formula of initial velocity, air resistance, and the rest, and discover what gun it is, with what charge, and what elevation, that would drop a missile, of what weight, at what range, and everybody knows that any gun such as there are many hundreds of in the modern world, can fire a missile from behind Dixmude or behind Nieuport which would fall somewhere within the large area of Dunkirk. What you cannot do at those ranges is to take useful aim, or to keep your gun safe. All you can do is to drop a missile within some rather large area and trust to Providence for the result. And meanwhile you must emplace your gun in some immobile fashion which renders it liable to discovery and to destruction. If anyone asks what object the enemy had in view when he thus dropped shells into Dunkirk at a maximum range and without aiming, the answer is simple enough. He was after moral effect. It is exactly what he did when he dropped bombs on Scarborough or when he dropped them the other day on Nancy, or when he dropped them on two occasions upon Paris. It is a perfectly legitimate method of warfare, as is the Chinese method (now abandoned) of imitating the cries of wild beasts. In attempting these "moral" effects, all you have to do is to gauge three things. The expense to yourself, the intelligence of the enemy, and the nerves of your enemy. Upon the first of these three things an accurate calculation can be made; to the two others no exact calculation applies. It is a matter of judgment, and perhaps of a sense of humour.

At any rate, the bombardment of Dunkirk, while imperilling three German heavy guns (probably naval) will have as much effect upon the war as though the shells had been sent out to sea.

One last point in the news of the week, the raid into the Baltic provinces of Russia, I shall deal with later, if, as is not probable, it comes to anything considerable. So far it is mainly cavalry work, it has no effect upon the main dispositions of the campaign, and its fruit is yet to be discovered. It is probably an isolated effort.

THE INTERVENTION OF ITALY.

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step

It seems quite clear that the next few days will decide whether the pivot of neutral intervention, Italy, will come into the war or not.

There are three neutrals worth considering—and only three (no one outside the newspaper owners in this country imagines intervention from elsewhere). These three are the Northern Balkan group—that is, the Bulgaro-Roumanian, the Greeks, and the Italians; and of these by far the most important is, of course, the Italian neutral.

In a certain fashion Bulgaria and Roumania balance each other, but Roumania was always more ready to engage upon the side of the Allies than was Bulgaria to engage upon the side of the Austro-Germans. The intervention of Roumania when it came, or if it came, would have a positive object, not indeed independent of the victory of the Allies, but progressively obtainable as that victory was gradually approached. Roumania had for her object (and still has) the occupation of territory governed by Hungary though inhabited by Roumanians. She further lives in a lively fear that if she does not intervene, this capital popular object of redeeming what is certainly national territory will be lost. The Court of Roumania is Prussian, and that is the main force against the intervention of Roumania.

Bulgaria also wants territory which is nationally Bulgarian and which Austrian policy deflected after the second Balkan War into the hands of Serbia. But this territory which Bulgaria desires to occupy is close to the Grecian boundary and close to the Ægean, and a quarrel with the Allies would further cut off Bulgarian territory during the war from all access to the outer sea.

The temptation of Bulgaria depended much more upon passion than upon reason. She had a great deal to lose if she made a mistake and jumped too early, for she would have made of Russia a permanent and implacable enemy, and the Allies, once victorious, would have left her no opportunity for such treason in the future. She had very little to gain unless she moved *after* it was perfectly safe to move.

The Greeks, had they intervened early, under the leadership of the man who is perhaps the best statesman in Europe (and almost the only man of outstanding ability which the Parliamentary system has produced in our time), would have had immediate and definite advantages. They would have had a claim to all that doubtful land, Greek in soul and language, but politically a prey to any intervener, which rings all round the Ægean.

With every week that passes the reward they can hope for grows less. The balance against their intervention was the certainty of very considerable losses in a population already tried by a double war and in an adventure which is admittedly one of extreme difficulty. Their smaller craft would be useful upon the sea, their numbers against the Dardanelles, but had the experiment failed, even with their aid, that aid would have been wasted.

Now, in the matter of Italy the question of intervention is something altogether different. Italy is a Great Power. Italy has had months in which to prepare, and during the latter part of those months has been preparing with great in-

dustry. She is in a position which no other Power connected with this war can boast: a position of preparation undertaken *after* the lesson of the war had been learned. She knows, for instance, the supreme importance to-day of vast quantities of artillery ammunition, and that is why she has stopped so much cotton on its way to Germany. It will be a pretty piece of historical irony if the American cotton, which the imperfection of the British blockade designed for our enemies, should after all be turned against them and should be discharging missiles to our profit. Italy has also had ample time to acquaint herself through the Intelligence Department of her Government with the dispositions of the German Powers. She knows in a way that we can never know what their public opinion is and what their abilities are for meeting her upon her own frontier, for she has been neutral and the recipient of not a few truthful communications all this long time. The enemy has told her things not always false, with the object of persuading her of his ultimate victory. She knows the worst. Her governing men are under no danger of exaggerating, as are those of France, Britain, or Russia, but particularly of Britain, the strength of the enemy. Italy has further the very great advantage of being able to choose her own moment. Lastly, she has the advantage of entering fresh into the struggle at a time when her enemy, if she chooses to have an enemy, is approaching exhaustion.

The arguments against Italy's intervention are political arguments clearly appreciable. There is first of all the obvious truth that anyone who can keep out of this tornado is well out of it. The Italian people have been immensely enriched by the power to produce peacefully and to trade while nearly all the rest of Europe had sunk its energies in a violent conflict for life. The Italian population, monuments, and treasures have remained intact.

More important than this negative factor was the highly positive factor that Italy could get one great part of what her people desired without loss by mere occupation of adjoining territory at the end of the war upon the defeat of the Austrians and the Germans. Heavy fighting would not be likely until an army reached the hills, but what the Italian people and the tradition of their modern resurrection really desire is not the defeat of an enemy beyond the mountains. It is the reconstruction of a complete Italy upon this side of the mountains. The Istrian Peninsula, Pola, Trieste, and even Fiume, are upon the hither side of the hills: part of the Italian plain.

Now, it is conceivable that at the end of a great campaign, in which the combatants were exhausted, even upon the victorious side, the Italians would have no more to do than to walk in and occupy this northern corner of the Adriatic. The valley of the Trentino, or at least the lower Italian-speaking part of it, would follow as a matter of course. And Italy would appear at the end of the struggle playing upon a rather smaller scale the part Roumania played after the second Balkan War: demanding a moderate accession of territory, to which she was really attached, and no more—and that without fighting.

But the Italian tradition demands a great deal more than that. It demands with a natural appetite the permanent establishment of Italy as a great Power. It is important for the Italians, if the unity and cohesion of their State and the permanence of its influence are to be secure, that they should enter the councils of Europe upon an equal footing with nations politically older than their own. It was this feeling which gave rise to the enthusiasm—soon checked—for Colonial expansion, half a lifetime ago. It was this feeling which led to the attack on Turkey, the occupation of Tripoli, and the naval work in the *Ægean* quite recently.

There is more than this. The Italians feel of the Adriatic that it should by right be an Italian sea, and, in the background, is that feeling which, whatever academically minded men in this country may say to the contrary, is present everywhere throughout civilisation: the feeling that a German, when he has the power to make war, is impossible: the feeling that this war is, in spite of all the triteness of the phrase, really a war for civilisation against blunderers who are capable in their brutal simplicity of destroying civilisation.

All these things move Italy to intervene, and, incidentally, Italy has the very great asset of a Court which is national. Her monarchy, parliamentary and a compromise though it is, is at least not a German monarchy. Her Court is not an international Court. There is a great deal more in that than the conventions of our modern political caution are disposed to allow.

If Italy comes in she would bring up for the first great actions (supposing the enemy to accept her challenge) about a million men. This force would be properly gunned and would have behind it munitions upon a larger scale than any corresponding number of any other Power in the field. It would be new to modern war and therefore untried. Possibly, or probably, it would meet in the first actions with local unexpected reverses, but it

would be so much more numerous than anything that could be brought against it, it could so rapidly acquire the lesson of all this new fighting, and it would be of such importance—once the conflict was joined—to make good that the move could not but change to our advantage, and that almost immediately, the whole character of the war. It may be safely prophesied the military spirit would spring suddenly in Italy to an unexpected height. The nation has desired for very long something that it lacked, not only native territory but a military name, and the trial once undertaken that appetite would become very vivid indeed. Anyone doubting that is ignorant of the Latin temper. It is a spirit not prompt to war, yet nourished by war.

Italy thus intervening would probably, though not certainly, determine the intervention of Roumania, and there would come upon the Austro-Hungarian forces a pressure too strong to be borne.

Would there be a corresponding increase of tension upon the Western line of the enemy, so that he would be compelled to shorten that line: in other words, to evacuate Northern France and most of Belgium before the English and the French deliver their blow?

It is to be doubted. Austria would bleed first. The German Empire would lend her against this new peril no more forces than it has already lent, for there are no more to lend.

But after the intervention of Italy has produced its full effect, after the Austrian Empire has begun to weaken its defence and that defence to "crack" at any one vital point upon the ring, then with the advance of no matter what enemy force into the interior of Hungary or the Slav provinces of the South-East, the German position would be logically desperate. The time remaining would be appreciable, but short, and a blow in the West, even a breaking of the containing line there, would no longer be able to save the German Empire from complete defeat. Its commanders would shorten their line.

THE WAR BY WATER.

THE GREAT LANDING.

By A. H. POLLEN.

NOTE.—This article has been submitted to the Press Bureau, which does not object to the publication as censored, and takes no responsibility for the correctness of the statements.

IT will probably be found, when the full details of the great landing on the Gallipoli Peninsula are published, that the most remarkable combined naval and military operation ever carried out in face of strong opposition has been accomplished. The official account, no doubt, tells us all the facts which are strictly material to our having a fair grasp of the situation on April 29. But it is pardonable to say that the more we know of the success that attended them, the more we wish to know of the methods by which that success was attained. The difficulties in disembarking troops on a shore which is well defended are, of course, so great as to be almost insuperable, and until the landing force is not only on the beach, but has been able to establish itself in tenable positions and in fighting formation, the entire conduct of the opera-

tions is under the naval command. I believe that I am right in saying that, technically, every man in a boat is under the naval officer in charge, and, even when disembarked, under command of the naval "officer of the beach" until paraded under his own officers, when authority over him passes from naval into military hands. The task put upon the admiral commanding and his officers is, therefore, a stupendous one. Where there is no port, no wharves, and no piers, the mere transport of the men from ships to the land and then their disembarkation constitute a vastly complicated affair. Everything that can float and can carry men or stores must be requisitioned, not only from every transport, but from every man-of-war. This numerous and variegated fleet, divided up into separate flotillas, each told off to its special unit,

must be pulled, sailed, or towed in proper order to the section of beach which each unit is designated to attack. As a staff operation, the organisation of boat work on this scale is a noteworthy performance. As a feat of seamanship, the effective landing, as near simultaneously as possible, of such large forces and in six different places is quite unprecedented. And the boat work would not be limited to a single expedition for each boat. There obviously could not have been boats or rafts enough—nor, for that matter, beach enough—to land more than a fraction of the expeditionary force at any one time. So fast as boats were emptied, steam pinnaces, destroyers, and other craft would have towed them back to the transports for fresh loads.

But the Navy's duties were not ended when it had delivered the Army safely at the beach. It would have to maintain an offensive of the utmost intensity on every enemy force within reach, so as to reduce hostile attack on the disembarked infantry to a minimum. When one looks at the largest available charts of the waters round the Gallipoli Peninsula, one is not surprised that the Admiral in Command reports that the Fleet is filled with an intense admiration for the achievements of their military comrades. For, as far as one can see, almost the whole of the northern coast of the peninsula is continuous cliffs. The five separate beaches mentioned in the official statement would appear at best to be exceedingly confined spaces, the defence of which by well-placed infantry, machine guns, artillery, and wire should not have been difficult. That a whole army has been landed with success on such unpromising ground is undoubtedly a thing of which that Army may be proud. It suggests a repetition of Wolfe's adventure on the Heights of Abraham, but on an incredible scale. And we may be sure that had the work of the Navy been carried out with anything short of perfection the thing would have been not only costly—it had to be that—but impossible.

By far the most difficult of all operations on a coast of this character is the landing of artillery and horses. It is a thing that puts the resourcefulness of seamen to the hardest test. No mention at all is made in the official report of artillery being used in the first five days' fighting, but the correspondents from Athens and elsewhere assert that the guns were landed and employed by the Australians and New Zealanders in their advance from Sari Bahr. But that the attack on Sedd-el-Bahr made on the afternoon of the 25th was made through undamaged wire entanglements would seem to show—first, that by the evening of the 25th no sufficient artillery for destroying these obstacles were available at Cape Teke; and secondly, that the lines defended by them were not exposed to the ships' ordnance. The artillery, we may perhaps take it, was not landed until the subsequent days. The official report speaks of its disembarkation with stores as being *continued* on the 28th and 29th, so that some of the guns may, therefore, have been landed on the 26th and 27th. Anyway, by the 29th, the whole of the end of the peninsula was in our hands and entrenched, while the Australians and New Zealanders held a second position ten miles to the north, at the end of the gap in the hills that runs through to Maidos from the Gulf of Saros.

The Fleet, having got the Army under its charge, with its guns, stores, horses, &c., safely on shore, still has to mother this force, for the Fleet

must continue to be, in a military sense, the Army's base. It is probable, indeed, that the troops will be dependent on the ships and transports for literally everything. It is doubtful, for instance, if they could even find water enough anywhere in the peninsula, and this state of dependence must continue long after the whole of it is conquered. And the Fleet must do more than this. The immediate objective of the expedition is the opening up of the Dardanelles—in other words, the subjection of the forts on both sides of this historic waterway. The taking of forts is a military, and not a naval, operation. By this I mean that a properly equipped army can subdue and take any fort in the world in time, while no navy, however well equipped it may be, can, without an army, take and subdue forts at all, unless it carries so many men as to be, in fact, a navy and an army too. In the taking of the Dardanelles the function of the ships will be to do for Sir Ian Hamilton's army what the 17-inch howitzers did for the German army in the taking of Liège, Mauberge, and Antwerp. The ships on the spot actually carry the greatest number of powerful guns ever brought into use in any military operation. In range, in numbers, and in mobility they surpass any artillery force that could conceivably be used from land positions. The ships' batteries include at least fifty of the most powerful pieces, running from *Queen Elizabeth's* eight 15-inch (which in a single salvo can hurl—to an incredible distance—no less than sixteen tons of high explosive shell) to *Triumph* and *Swiftsure's* four 10-inch. There are besides these *Agamemnon* and *Lord Nelson's* broadsides of ten 9.2's, *Triumph* and *Swiftsure's* fourteen 7.5's, and probably at least fifty 6-inch guns as well. This vast battery can be employed at long or short range. It can be moved up the Straits as fast as forts are subdued, mines cleared, and torpedo stations destroyed. It will be the first function of the Army to facilitate the use of these guns by helping to ensure the accuracy of the ships' fire. The Army's own artillery will have the important function of taking the forts in reverse and, as far as possible, preventing the enemy from returning to the forts when driven out by the ships' fire. Finally, by occupying and destroying the battered forts, the Army will open the way for the Fleet to enter the Sea of Marmora. And this is the objective of the expedition, because if half of them get through uninjured, and the Army is able to prevent the enemy from closing the Straits behind them, the fate of Turkey will be sealed.

THE ARTILLERY PROBLEM.

This is an exceedingly attractive programme, but it is as well to remember that, vast as is the artillery force engaged, the difficulties to be surmounted in using it with effect are enormous also. That using guns at long range against a ship presents problems of a kind totally different from using them against land positions is already a familiar truth. It is more difficult to *keep* the range of a ship when you have found it, because the ship is free to move at any speed it likes, and in any direction; but it is more difficult to *find* the range of a fort, because, first, it is an object far less distinct from its surroundings than is a ship; and secondly, the projectiles that miss do not mark their positions by well-defined columns of water

spouting 100 feet up in the air, whose position relationship to the target can easily be detected from the ship's fighting tops. A projectile that misses a fort may be 500 yards short, and seem from the ship to be a hit. It may be 500 yards over and appear to be exactly where it is wanted—namely, just over the parapet. You can find the range of a ship by spotting from the masthead, because the column of water is so plainly visible. But, against a fort, all spotting, to be effective, must be done from some point at a distance from the firing ship. Where a second ship can stand off, at any angle greater than 30 degrees from the line of fire and closer to the target, the second ship can spot for the first. The recent attacks on all the Turkish forts except those at Sedd-el-Bahr and Kum Kale were ineffective because there was sea room here for spotting ships almost at right angles to the line of fire—the ideal position—while, once in the Dardanelles, the Straits are not wide enough to permit an advance ship to spot for the others. And aeroplanes are not a satisfactory substitute. At best an aeroplane can help one ship only. If the troops can seize good observation positions on the hills above the forts, it should not be long before a bombardment of greatly improved accuracy is brought to bear upon them.

But, even with such positions, there will still be considerable difficulties. It would, for instance, be a mistake to suppose that the guns I have enumerated could ever be brought simultaneously to bear upon the same target. Guns of separate ships cannot be controlled together in groups as the guns of a battery can be on land. At sea, where it can very seldom happen that more than three ships desire to concentrate on a single target, the difficulty of spotting independently for each unit ship is very great, but not insuperable. The Germans use an ingenious device for simplifying this procedure. The spotting officer has a press button under his hand, which is started the moment the salvo is fired. This controls a timing element, which is set to the number of seconds the projectiles composing the salvo should take to carry to the range set upon the sights. Half a second before the end of this interval a striker within the device is brought sharply against a loud gong. The salvo of the spotter's ship, therefore, should strike the target or the water while the gong is still sounding. If several ships are engaging the same target, the spotter ignores every salvo except the one that coincides with the gong. But this method could not, of course, be employed unless the spotter were in the firing ship itself.

It is, of course, a commonplace that increased fire effect may be got either by a greater accuracy of a small number of pieces or by the concentration of a larger number of pieces on the same target. If the arrangements for the correction of fire are sufficiently good, and if the ships can without danger come within such range that a high average of hits may be expected, then, so powerful is the battery of even the smallest of the ships, no fort can be expected to survive very long. But, if concentration and accuracy can be combined together, the rapidity with which the desired effect is obtained will naturally be much greater.

The difficulty in correcting the fire of a multitude of ships is, it may be added, two-fold, because each salvo must be identified as coming from a particular ship, and then that ship be in-

formed of the correction. There is apparently no escape from the necessity of having a separate spotter for each ship. If the spotter is in an independent position, the obstacles in the way of this double task are considerable. Neither identification nor communicating the correction will be easy. And it is not only the concentration of many ships on a single target that creates the difficulty. It will be almost as great when several ships engage in a simultaneous attack on contiguous forts. The final solution can take one of two forms. Either concentration will be abandoned altogether, or two or three ships may be combined against a single fort, and the forts selected as targets be taken from different groups. Experience will show the better way, and no fleet has had such experience of long-range fire as that now at the Dardanelles. Indeed, this experience appears to be the only asset which the attempt to force the Straits by ships alone has yielded.

In the official report there was nothing to say whether the gunfire which *Queen Elizabeth* and *Triumph* directed on to Maidos was indirect—that is, over the land, or direct up the Straits from some spot above Kephez Point. The only detail given was that *Queen Elizabeth* had sunk a transport after the third round. And to hit a transport by indirect fire seemed almost impossible. Subsequent unofficial reports, however, speak as if all the shooting had been indirect. Should this prove true, an amazing thing has been done.

A BRUSH IN THE NORTH SEA.

THE past week has been remarkable for a vigorous revival of the submarine attacks on British and neutral shipping, and the first exchange of shots that has occurred in the North Sea for a hundred days. This last was a small affair of outposts, and is chiefly interesting for the fact that the Germans had actually rescued a British officer and two men from a sunken trawler; but only to confine them below in their own boat, and to keep them there while that boat was being attacked and finally sunk by the British destroyers. On Monday the Admiralty had published our having saved over 40 German officers and men and their having failed to save any of ours, and on Tuesday added the evidence of the disgraceful proceedings I have recounted. Both announcements have been made without comment, nor is comment required. Apart from the brutality of the German conduct, the encounter seems to be without any particular strategic importance. By their own account, the German fleet, well protected from any sudden attack by a screen of Zeppelins and destroyers, had made a parade the week before in the North Sea, and then boasted of it as if there were no British warships of any kind in that area. The torpedo-boat captains, perhaps taking the German Admiralty at its word, pushed a little too far on Saturday, with the result we know. But neither the parade nor the adventure of the torpedo-boats gives rise to any hope that Germany will put the command of the sea in dispute by coming out in force to attack Sir John Jellicoe. Nor will the submarine attacks on neutrals alter radically, though they may embitter, a situation already complicated enough.

A REVOLUTION IN WARFARE.

THE GREAT OPPORTUNITY.

By L. BLIN DESBLEDS.

NO one will, to-day, deny the invaluable services rendered by the aeroplane since the opening of hostilities. Yet, when the war broke out, there were numerous persons—and among them high military authorities—who were unable to foresee the great part aircraft were going to perform. In spite of the accumulated evidence pointing to the great importance of the aeroplane for offensive purposes and showing in what manner this weapon must be used if it is to be of real value, there is as yet no sign of its being employed as it ought to be.

It can be affirmed that the aeroplane is a sufficiently powerful weapon to force the German Fleet to come out into the open sea, at our bidding, to accept combat with our Fleet, or to be destroyed in the seclusion of its harbours and under the very nose of their guns and in spite of the protection of their forts. The expert knows that there is in the aeroplane a potentiality, capable of immediate application, whereby the fifteen odd railway bridges on the Rhine could be destroyed in the course of a few hours, and thereby cut the German Army in the Western field of operations from rapid communication with Germany. But no advantage has yet been taken of this knowledge.

People are discussing whether the advent of aircraft in military and naval operations has, to any considerable degree, modified the principles of war; and it is the general opinion that aeroplanes and airships have not revolutionised warfare. But why have they not done so? Simply because we have not permitted it. And this can be proved as clearly as a proposition of Euclid.

If a Commander-in-Chief had some means at his disposal by which he could prevent the enemy from using their guns and their rifles, all along the line, from the North Sea to Alsace, would not that method be considered revolutionary? If you could prevent the enemy from using their weapons by the employment of your aircraft, would you not consider that your air fleets have revolutionised your ordinary, tedious, long, and costly methods of carrying on war? If, therefore, it can be shown that aircraft can render the enemy's guns and rifles valueless to them, it must also be admitted that aircraft are capable of revolutionising the present methods of warfare.

It is estimated that, every ten minutes, a military train, carrying reinforcements, ammunition, and supplies, passes over each of the fifteen principal railway bridges over the Rhine. This means that 144 train-loads of ammunition, supplies, or reinforcements pass over each of the bridges in twenty-four hours, or that it requires 2,140 train-loads a day to keep the German Army operating in the Western field provided with war material. To keep the German Army well supplied it is necessary that these 2,140 trains should cross the Rhine every day, and on the regular running of these 2,140 trains the German Army in the Western theatre of war depends.

It is computed that the German Army in Belgium and in the North of France has ammunition and supplies sufficient for four days only. If, therefore, you suddenly prevent the 2,140 trains from crossing the Rhine the German Army will, even after twenty-four hours, find itself in a very serious predicament indeed. If only a third of the number of trains crossing the Rhine—that is, 714 trains—were continuously stopped from running for a few days, the German Western Army would find itself considerably handicapped as regards arms, ammunition, reinforcement, supplies, &c. Can aeroplanes be used to hamper, to any considerable degree, the German railway traffic to the extent of preventing some 700 trains from daily crossing the Rhine? This question the writer proposes to examine.

We have read lately, both in the reports issued by Sir John French and by the French War Office, that the Allies' airmen have been busy destroying a number of railway junctions some little distance behind the enemy's trenches. That this could be done the writer had shown in one of his previous articles*, and in it he has also foreseen the reason why the recent aerial offensive of the Allies' airmen against the railway junctions behind the enemy's trenches has not been followed by direct permanent results. This kind of aerial attack on railways is, however, of a quite different character

and carried out with a quite different object from the aerial offensive we are now considering.

The recent aerial offensive against railway junctions had for its object the hampering of the distribution of men, supplies, ammunition, &c., in the theatre of war, whilst the aerial offensive now under consideration would be to prevent reinforcements, ammunition, supplies, &c., from ever reaching that theatre. The first kind of offensive aims at the destruction of nodal points on the railway system almost immediately behind the enemy's lines, whilst the object of the second is to prevent trains from passing from Germany into Belgium or France.

To be successful this second kind of aerial offensive against railways should result in a simultaneous and prolonged interruption or in repeated interruptions on all, or some, of the lines from Germany into Belgium or France.

It is clear that a single aeroplane or a small number of flying-machines, of the existing types, cannot produce any permanent destruction of railway engineering works such as bridges, culverts, &c. Besides, it is very probable that such works are protected against possible aerial raids. This would force aircraft to fly over them at a great altitude, and one would hardly expect that, dropped from a height of 7,000 to 8,000 feet, the few bombs that could be carried by a small number of aeroplanes, destined to a journey of some considerable duration and to fly at a great altitude, would hit the mark. But if, instead of a few machines, a large number, say 150 or 200, set out to destroy a bridge, the chances are that they would succeed. If they did not succeed once, they would certainly succeed if the operation were repeated. The necessity, therefore, of employing a large number of aeroplanes for offensive operations against railway lines from Germany is made apparent.

Besides attacking the engineering works of the permanent way, aeroplanes operating simultaneously in numbers of 40 or 50 could also bomb running trains. Such destruction of trains would be of especial value if it were performed at points where they enter into, or emerge from, tunnels, for, in such cases, the aerial attack, if successful, would produce considerable delay in the traffic.

It will thus be seen that aeroplanes on the offensive, provided there be a great number of them, could, without doubt, considerably dislocate the railway traffic from Germany into France or Belgium. They could do this in three ways: (a) By destroying, or seriously injuring, railway bridges over the Rhine; (b) by attacking running trains, especially as they enter, or emerge from, tunnels; (c) by causing damage to local stations, junctions, &c. The writer estimates that the possession by the Allies of an offensive air fleet, 1,000 aeroplanes strong, and kept at this strength, would, in a very short time, render the maintenance of the German Army in the Western theatre of war a matter of extreme difficulty, if not of impossibility. Add to this the fact that with a disorganised railway traffic the enemy would be unable to transfer quickly troops from the Western to the Eastern theatre of war, and vice-versa, and that the damage which a strong offensive air fleet could do the German arsenals, and you will come to the conclusion that a powerful air fleet could now not only prevent men, ammunition, and arms from being sent to the German front, but could also actually interfere with the manufacture of those arms and ammunition.

Just as a large number of machines is necessary for the destruction of railway permanent works, so it is indispensable for the destruction of the enemy's arsenals. In one of his previous articles the writer estimated that some 1,000 aeroplanes were required to destroy for good Krupp's works at Essen, and, after careful investigation, he expressed the opinion that that number of machines could be produced in Great Britain in the course of about five months without in the slightest degree interfering with the established aeronautical industry. He arrived at that number of machines as he had calculated that it would require some 70 tons of explosives to annihilate for ever the great arsenal.

Now, if aeroplanes could render guns and rifles useless in the hands of the enemy through lack of ammunition, is it too much to say that they could revolutionise warfare?

* "The Vertical Battle," LAND AND WATER, February 13, 1915.

THE MORAL EFFECT OF FORCING THE STRAITS.

By COLONEL F. N. MAUDE, C. B.

THE incidents that have occurred in the Dardanelles furnish a useful illustration of the methods adopted by the Allied Governments for prosecuting the war, as compared with those used by the Germans. While the Government of Germany endeavours by acts of terrorism, submarine blockade, bombardment of exposed localities, and so forth, to stir up discontent amongst the electorate, and thus bring pressure to bear upon the directing organs of the fighting forces, we have systematically refrained from directly molesting the people, but have concentrated our efforts on operations intended to impress and dishearten the enemy's Government and General Staff, leaving them to break gently to their suffering dependents what has happened.

The threat of a submarine blockade had no effect whatever in disconcerting our responsible Heads of Administration, but the threat against the Dardanelles, in spite of the many delays that have attended its execution, will be shown (when accurate documentary evidence is forthcoming) to have spread consternation throughout the countries of the Dual Alliance, and to have modified the whole situation far more than the direct introduction of many Army Corps and the expenditure of many millions of shells.

If there is one operation of war that the German General Staff has of late years studied more thoroughly than any other, it is the question of disembarkations on an enemy's shore, and, like everyone else who has really gone into the matter, they had arrived at the general conclusion that, given adequate artillery support from the fleet—i.e., the facility of fairly close approach to the coast—and efficient numbers distributed over a wide enough front, success in such movements could be more certainly guaranteed than it could be in any other operation. It was even more certain than the passage of a river.

They more than probably experienced a temporary feeling of relief when our first attempt to rush the Straits broke down, but the Headquarters Staff knew that we possessed both the means and the determination to concentrate the forces required to effect a successful landing, and also that, in the uncertainty of the spot against which a first effort would be made and the well-known condition to which the Turkish Army had been reduced, it was impossible to guarantee sufficient opposing numbers at each and all of the many points we might select.

The still neutral nations of the East grasped the situation at once, and their intervention, previously very doubtful,

became so inimical that reinforcement, not hitherto dreamed of, had to be sent from Germany to meet the threatened danger that was clearly gathering momentum. The longer the delay accorded, the greater the forces we were concentrating, and correspondingly greater the growing anxiety at the enemy Headquarters, which is clearly to be traced in the increasing mendacity of the official communiqués, in which no intelligent Staff officer in any army could be found to believe any more than would those of the Allies or even their own.

Our education has been conducted on such uniform lines ever since 1870 that there is no room in us for misapprehension on that point. All this effect was gained by the mere threat of forcing the Straits. Now, what will follow as a consequence of our having actually landed?

The Turks cannot hope to get together more than 300,000 men for the defence of the areas immediately threatened, and of these some 60,000 are now securely locked up in the Peninsula of Gallipoli itself, where they can neither be reinforced nor withdrawn, as already the Isthmus of Bulair is completely covered by our fire.

One hundred thousand Turks, at the least, are held up by the threat of a Russian descent from the North, of which we may expect to hear almost at any time. This leaves about 140,000 available for distribution between the French on the Asiatic side of the Straits and along the coast from Bulair towards the Greek frontier.

There is also the garrison of Constantinople itself to be provided, and the city is certainly not in a condition safe enough to allow it to be left to its civil population alone.

As regards the details of the landings effected, they remind one of those employed in the disembarkation of Abercrombie's troops at Aboukir in 1801, except that in the latter case, owing to the short range of ships' guns, a hundred and odd years ago, there was no artillery support for the assailants. Abercrombie's boats had to row in for five miles, and the enemy opposed them with heavy guns and most vigorous charges of both foot and cavalry, delivered as our men were forming up on the beach. One battalion was, in fact, charged by horsemen while still knee-deep in water.

There seems to have been a similar absence of surprise in the present instance, and all the resources of field engineering and wire entanglement had been liberally provided for our reception, but so terrific is the power of modern ships' armaments that all those obstacles which could be reached by them were shot to pieces on a front sufficiently wide to allow our men to attack under favourable conditions.

TALES OF THE UNTAMED. III.—RANA.

Adapted from the French of Louis Pergaud by Douglas English.

JUNE'S noonday sun weighed heavy on the pool. Across it stretched a gossamer haze, soft, filmy, evanescent, its edges tacked to stiff upstanding reeds. The massing of the slimy growth of threadweed, the twisted green of water-thyme and starwort, the overspread of lily leaves, had each been toll paid gladly to the season—toll from a silver treasury, toll paid to the slow course of days, to ardent sun, or dreamy moon, as each compelled the exchange.

The willows drooped green tresses to the water, as though to shield their dainty feet from sunshine's wanton kisses.

Slow, fretful, gurgling bubbles sighed from under, creeping the length of lily stalks, which, by the curling of their leaves, seemed treacherously to abet the mirrored blue.

And then came heaviness once more, and torpor of the heated air, without a threading breath of wind, without a petulant bird-note—its lullaby a cricket's churr, borne from the sun-burnt slope.

The concert of the frogs had ceased at dawn. Yet, hour by hour, some soloist had voiced his futile passion. Twin bubbling spheres swelled from his throat, and shrunk, and swelled again, and so made music.

Now even these mad minstrels ceased lamenting. Each

sat immobile on his leaf (as the sun's heat had ordered) staring with steadfast gold-rimmed eyes, breathing full-lunged the infinite air, disdaining wind-flung grasshoppers, and lazy, amber-tinted flies, which melted in the haze.

The pool lay lifeless, spell-bound.

It was the drowsy witching-time, which turns frog-folk to stone—the hour when frog-folk, come what may, must bask. A few had left their element, and lay flat-bellied in the grass. These too paid homage to the sun. To dream of life contented them. No footfall shook the ground; no danger threatened.

Head high, hump-backed, sat Rana on her leaf—Rana, the portliest matron in the pool, High Priestess of her tribe. Her legs were doubled under her; her speckled paunch drooped flaccid either side. Her colouring, emerald slashed with gold, commingled with the colouring of her throne.

Six times had Rana known the heat of the summer—the lethargy that came with it, the weariness, the numbing of the veins.

Six times had Rana known the heat of autumn—the gathering of the water frogs, the palsying of their slackened nerves and sinews, the struggling through the gloomy mid-depth weeds, the plunge into the ooze of the abyss.

The land frogs gave the signal. These left the pool when spawning-time was past, and, through midsummer, roamed afield, and fattened on the grasshoppers. But autumn brought the truants home, for they, too, wintered in the mud.

The silence of the pool grew heavier, tenser; as though some crisis threatened it, as though some pent-up energy sought outlet from its depths.

Yet life restrained itself, till Rana blinked.

Was it a sign? Or answer to a sign?

A wind-spiced ripple danced across the water; a finch screamed from her cloister in the willows; a footfall half a field away stole vibrant to the hollowed bank, and scared the adventurers stranded in the grass.

The pool roused from its slumbers, and, thrilling with new springs of life, with sense of strife perpetual, with dread of danger unforeseen, dragged slowly from the quagmire of oblivion.

Flop! fell a great green grasshopper past Rana's nose. His feelers streamed behind him. He dropped with shins hinged to his fleshy thighs, with network of his leaf-green wings spread sodden on the water.

Before they snapped together, Rana had him.

She launched with one quick back-thrust from her leaf, and gulped him with a tongue-flick, and rode at ease, with balanced legs, rocked on her buoyant element.

The feeding hour had come again.

Gay dragon-flies sped to and fro, darting, reversing, wheeling; with rainbow-tinted wings a-whirr to match the rainbow shimmer.

Dull splashes sounded from the reeds, and flops, and throbs, and gurglings.

The swallow's flight that flecked the blue, trailed mirrored shadows criss-cross on the ripples.

The air was thronged with life's redundant echoes—the gossip of the haymakers, the neighing of the stallion in the close, the drowsy lowing of the driven kine.

Rana, still idly floating, stared goggle-eyed and listened.

The distant voices had no message for her; but presently came notes of instant menace, the flip and flop of frightened frog-folk diving.

Rana sank quietly downwards, until her nostrils only cleared the water.

What sound was this?

The yap of fox she knew, the grunt of hern, the squeaks of stoat and rat. But it was none of these—softer it was, and more sustained, a lecherous, sibilant love-note. It chained her, fascinated her. She slewed about to search for it, and, on a sudden, checked and froze to stone.

With browning channel in his wake, with muddied smear across the weed (as though his trail were tainted), the Water Snake slid from the swaying reeds.

His eyes were fixed on Rana's eyes. He made soft surring music. His tail was hitched about a thickened reed-stem.

Rana stared back. Her hind-legs slowly rose awash, then slowly stretched behind her. Her forelegs stretched opposed to them. She floated like a stick upon the water; and, like a stick, drew slowly to the bank.

The snake's flat head swayed balancing. The primrose collar on his neck had warmed to foxy orange; the olive of his back and sides matched the rank pond-weeds under him; his blue-grey belly melted in the ripples.

And Rana, floating with her legs a-wash, her paddle-feet immovable, drew shorewards like a needle to a lodestone.

The snake's head steadied over her. He seemed to balance motionless, but, from the anchored tail of him, crept shuddering ripples scale to scale, and spent themselves in his thin forking tongue.

Rana had stranded close inshore.

Her pool, her leaf, her kindred were forgotten.

The tongue benumbed her consciousness, constrained her course, effaced her personality.

Just as a power outside herself compelled her in the autumn to the mud, so now an impulse from without compelled her passive to the jaws which gaped their hideous summons.

Yet, in some sense, she felt the menacing difference.

No safe retreat awaited her, no sanctuary of ooze.

Her instinct warned her of annihilation. Her brain forestalled the inevitable, foretasted the unknown.

The snake's jaws widened slowly. They hid the steely glitter of the eyes; they loosed the twist and flicker of the tongue.

Wider they stretched and wider still, and lengthened out towards her. The reeds were lost behind them, the shelving bank, the sky itself.

Rana sat up, crooked both hind-legs, leapt, and, like arrow deftly aimed, dropped head-first in the gape.

The jaws clicked to, luxated bone from bone, spread latticed to embrace her head and shoulders.

Her hind-legs, brandished wide apart, waved their last message to the world.

A gluey slime enveloped her. A worming of the gullet's walls dragged her with screwing down-pull to the belly.

The imprisoned air drummed in her stifled lungs. A surge of frothing bubbles lapped her face. It crept between her tightened lips. It ate into her close-veiled eyes. It stung and scalded, rotted flesh and bone. The sense of death stole over her, or, rather, of life's slow disintegration—a lethargy distinct from stroke of sun, in that its dull imaginings were crystallised in pain.

And suddenly the darkness leapt, and pitched, and reeled gyrating. Her dangling legs lashed to and fro. Her palsied nerves awoke to quickened feeling.

The down-pull of the gullet ceased abruptly. Its muscle-tautened walls relaxed.

As her feet swayed, the weight of them tugged at her slime-smear body, and dragged her slowly backwards from the abyss.

She kicked to find a purchase. She squirmed and writhed and met no check.

Her head slipped clear. Her hands slipped clear. She dropped into the void.

A tilt of Nature's balance had released her.

The snake had lain exposed to gorge his meal—the scales about his yellow throat stretched on the drawn skin clear of one another; his lower jaws disjoined from their hinging; his upper jaws loosed from the palate bone.

His head was a broad target.

From towering pine the buzzard sighted him, and, swooping, drove her talons at his back, and soared with him on high.

With broken spine he dangled from her claws, and Rana dangled from his mouth, and, of her own weight, slipped adrift and fell.

She had not seen a feather of her ally.

She fell feet-spread, and squelched like flattened egg. The air whooped from her lungs; her tongue protruded.

And yet she was not dead. Long hours she lay, dead to all outer seeming, but, in the healing shades of night, a miracle was wrought.

Her tongue crept slowly back to its set station. Her lungs once more drank air. Her belly filled and rounded like a bladder. Her pupils, which had closed to slits, widened to gold-rimmed spheres again. She blinked, she closed her triple lids, and gathered up her feet beneath her body. The world was horning to her—light in her eyes, sound in her ears, a livelier tint about her sweat-drenched skin.

She woke to sudden consciousness, and listened to the night.

She gazed at the star-spangled sky.

What were these glittering points of gold which flecked the infinite blue? Did frogs celestial blink at her, or glow-worms of a world beyond her reach?

She gazed at the stone-laden ground.

What was this dusty grit beneath her feet? This sun-baked sand which clung to her moist skin? Where were her palaces of reed? Where the soft oozy mud? Could some mad chase of grasshoppers have brought her to this desert? But instinct checked her questionings. A single thought obsessed her brain—how she might come to water.

Round her were earthy-smelling plants, and voices unfamiliar—the cheep of partridges astray, the churring of the nightjar.

But suddenly, from westward, came, faint with distance, strains which had a meaning.

Brek-ek-ek-ek-ek-ek-ek-ek-ek! Ko-ax. Korex. Kro-ax. Kro-ah!

They floated wind-borne up the slope, zigzagged through stiffened grass-stems, through nettle-beds, through parsley-green, through a maze of vetch and bindweed. The champions caught the echo of them, and flung it to the ox-eyes. They spent themselves in undertones against the sand-cliff wall.

Rana sat up with ears agog.

The past was blotted from her mind. She made no effort to unite the severed strands of memory. She hopped straightway towards the beckoning sound. Night-long she hopped. At times she paused, took bearings, and pressed on. She reached her goal at daybreak, circled the four-square bed of reeds, and, from the overhanging bank, gazed rapturously at the throng of heads which peeped white-throated from the rippled surface.

Then, with a leap magnificent, she plunged back to her world.

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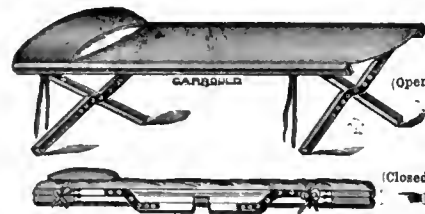


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THE NEW TONE IN DRESS

By MRS. ERIC DE RIDDER.

A WELL-known Englishwoman, who has just returned from some months spent in France, is of opinion that the whole atmosphere here has changed in a very subtle fashion. She declares there is a visible difference between the country as it is to-day and as it was in August and September of last year. There is a growing fixity of purpose, a graver appreciation of the serious problem before us; an intensity of tone which several critics formerly found lacking. The woman in question was one of the many who, from time to time, have waxed indignant upon this theme. "If people in England could only see France," she has written, "then you would at last realise what war really is, and how wholeheartedly the French are meeting it. When will England wake up?"

But at last it seems we are to have this reproach removed from us. To all intents and purposes the country is going on much the same as usual, but there is all the same an underlying influence showing the changes at work. It is something that cannot be seen so much as felt. Theatres are open, so are the restaurants. The inveterate race-goer can still take the train—always allowing for it being delayed—to Gatwick or Newmarket. It is true that after ten at night nobody, however thirsty and however temperate, can slake their thirst by anything alcoholic. It is true that anybody who makes any engagements at all does so on the spur of the moment. We live too much from day to day, fearing yet always hoping to allow of any other course. Our days and their disposal lie at the mercy of an official telegram or a name in the dread list in the paper, and in consequence we make but a few plans. Social entertaining, in the ordinary sense of the word, is dead naturally enough. It is true that there is an unusual number of men wearing uniform. At any evening, at any play, it will be found that a great proportion of seats are occupied by men in blue or men in khaki. It was, however, none of these things that gave the impression of our altered point of view, but the general aspect of things as a whole. And foremost amongst these must be counted the way in which nine women out of ten are dressing themselves at the present time.

Subdued Note.

It was a case of this tenth woman, a morning or two ago in Bond Street. In the distance appeared a patch of vivid, unusually aggressive, pillar-box red. As it grew nearer it resolved itself into a girl who looked nice enough to know better. She was dressed in a suit of this flaming hue, and, without exception, she was the one woman in all that crowded thoroughfare who wore any strident hue. Every other woman was quietly garbed, that is to say, every woman whose dress in any way merited notice. No impression of poverty was given—in the greater number of cases very much the reverse—but there was an absence of colour that was almost remarkable. Everything worn was of neutral tone, or verging on the dark side in colouring. It needs but the briefest thought to see that this lack of ostentation, of anything glaring, blaring, or unduly striking, is symbolical of the Englishwoman at her

best. It is the outward and visible sign of her feelings. The war has had many indirect influences, but the one it wields over dress is amongst the strongest of all. It has killed vulgarity at one fell swoop, and nobody is a penny the worse, but on the contrary infinitely better. It is to be hoped that even the strongest reaction in days to come will not revive blatancy of fashion once more. We have surely learnt to eschew anything so ugly.

Studied Simplicity.

In the meanwhile everybody is agreed that women have rarely appeared to better advantage than at the moment. Clothes being stamped with the hall-mark of good taste are more becoming than they have been for a long while, and every tendency towards undue exaggeration is slowly but surely being curbed. Exaggeration might easily have crept in with the new outline, but up till now it is conspicuous by its absence. When the first new coats and skirts were launched in the leading *ateliers* there was but the smallest difference between them and the crinoline modes of our grandmothers. It was felt that while full skirts are delightfully practical, half their comfort is gone with any suggestion of the hoop. Numbers of women, who allowed a stiffening of whalebone to be sewn inside the hem of their dress, had it promptly removed, and not a few had folds of material taken away, leaving only a reasonable fulness—one more proof, if proof were needed, that moderation is the goal aimed at by most folk just now.

Since women have proved the utility of the wide skirt it is likely to remain, otherwise it is more than possible that such a radical change of fashion at this crisis of history would not have been tolerated for a moment. As it is the

relief from the day of shackled garments is great, and again the war influence makes itself felt. Many women are on their feet from morning to night, planning, organising, and helping some fund or work in one direction or another. The wide skirt is a boon to all industrious people without doubt. So, too, is the disappearance of flamboyant headgear. The almost severely plain hats presented to our notice amply fulfil the needs of the moment. And that being so, it is kind of them to be attractive at one and the same time.

The Cause and the Effect.

Women are grave, and, as a natural result, their clothes are grave also. It is a cheering sign that in spite of this tendency to sombreness there is no tendency to neglect the personal appearance. The fact that there are still some women amongst us who continue to take an interest in clothes is not a proof of what was neatly termed "our incurable levity." The true answer lies in the character of the clothes themselves. They are practical, they are subdued, they are free from any taint of aggression. These at least are the main points of clothes chosen and worn by the women who matter. The mere idea that Englishwomen should dress flauntingly and unbecomingly at this time is a painful one. It is not, however, carried out in reality, as anyone can see at any gathering of responsible women. The country is the gainer by this tendency on the part of its daughters.



Copyright Madame Lallie Charles

THE COUNTESS OF STRADBROKE

Who has turned Henham Hall, her husband's place in Suffolk, into a hospital for wounded soldiers. Lady Stradbroke has been in charge herself since the war began. It is not so very long ago that Henham was visited by Zeppelins. Several bombs were dropped without any serious damage being done.

SEARCHLIGHTS

By "A.M.I.C.E."

THE Voltaic Arc was discovered by Sir Humphrey Davy about the year 1808. In that year Davy obtained the money to construct a primary battery consisting of 2,000 cells with which he showed at the Royal Institution the experiment that created so much attention in those days. Two pieces of charcoal were connected by wires to this powerful battery; they were brought together until they touched, and then separated to a distance of about $\frac{1}{8}$ inch apart from one another, when a flame of dazzling brightness was obtained between the two charcoal pieces. The light so obtained was known under the name of the electric arc, because the flame passing between the pieces of charcoal was in the form of an arc.

In a modern arc lamp carbon rods are employed instead of charcoal. As the electric current will not jump the gap between the ends of the carbon rods, it is necessary to bring the ends together until they touch each other, and then separate them a little. Technically this is known as striking the arc. The distance between the carbon rods is automatically kept constant by the mechanism of the arc lamp, which is worked by the electric current passing through the lamp.

As the arc continues to burn the carbons are gradually consumed. When continuous current is used (this is nearly always employed for searchlights) the carbon rod which is connected to the positive pole of the electric circuit burns away faster than the other one, while at the same time they assume different shapes. A cavity or crater is formed in the end of the positive carbon, while the negative carbon becomes slightly pointed. By far the greater part of the light comes from the white hot end of the positive carbon.

Crude searchlights were first employed for military purposes during the American Civil War, while in the Franco-German War of 1870 they were used during the siege of Paris, when the Germans in vain tried to surprise the forts during the night. Similarly the besiegers employed them for studying the French positions at night. The French ships operating against the German ports also employed searchlights.

After the Franco-German War, experiments were carried out to perfect the searchlight for naval and military purposes, and in the Spanish-American, South African and Russo-Japanese wars, the importance of searchlights on board ships, in fortresses, and in the field was abundantly demonstrated.

In the early lamps attempts were made to concentrate the light emitted by the electric arc lamp by means of glass lenses similar to those used in lighthouses. Fresnel was the first man to concentrate successfully the beams of an arc lamp by means of special lenses.

A great step in advance was made in 1876 by Colonel Mangin, of the French engineers, who introduced the Mangin mirror as a reflector. This mirror consists of a silvered glass reflector having the inner and outer surfaces ground to curves of different radii. In 1886 Schuckert, of Nuremberg, succeeded in producing a glass parabolic mirror ground to mathematical accuracy. Mangin's mirror had the same effect as a parabolic surface in producing a parallel beam of light. The disadvantage was, however, the liability to fracture when cooling, owing to the unequal thickness of glass produced by the unequal radii. Since the introduction of the parabolic reflector very few changes have been made, and for all practical purposes the ordinary searchlight of to-day is the same as twenty-five years ago. The reflector consists of a parabolic mirror, made of glass, carefully ground and polished to the requisite curvature and silvered on the back like an ordinary looking-glass. Such a mirror has the mathematical property of sending out all light from the focus of the parabola into space as a parallel beam.

Diverging beams of light are used for navigating purposes. In the Suez Canal a special dispersing lens is employed, giving a wide beam of light, having a dark band in the centre, so that no direct light is thrown on approaching vessels, while at the same time the sides of the canal are illuminated.

In passing through the air, the elements of the beam encounter various impurities such as dirt, carbon, particles of moisture, etc., which absorb, reflect and refract the rays of light. From this cause the beam is visible, while at the same time it falls off rapidly in intensity. Naturally the

effective range of searchlights depends largely on atmospheric conditions.

For tactical purposes searchlights are classified (a) moving, (b) fixed. A moving light can be moved horizontally or vertically through an angle only limited by the construction. Such a light can be directed on any target within its field of action. A fixed light is kept steadily on one bearing and elevation for the illumination of one definite object. A concentrated moving light is called a searchlight or searchbeam, while a concentrated fixed light is called a "sentry" light or beam. Dispersed lights are generally fixed. To increase the range two or more lights are often employed in such a way that the beams illuminate the same area.

Various types of portable searchlight sets have been developed. The power wagon carries the petrol engine dynamo and other accessories, while another carriage contains the portable searchlight, and sometimes an expanding tower on which the projector is mounted. The wagons can, of course, be arranged for motor or horse traction. Motor lorries have also been constructed to combine the generating set and searchlight all in one.

Searchlights in the field should be located so as to be able to search effectively the approaches of a battle area with a view to an early discovery and identification of the enemy. They should be well entrenched, placed if possible on the flanks of the position, and be on a higher level than the defending troops.

For observation the range of searchlights on land is from 2,000 to 3,000 yards, and further for illuminating purposes.

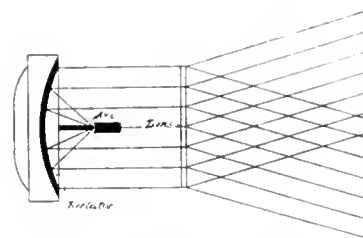


Diagram Illustrating the Use of a Lens to Obtain a Dispersed Beam.

Moving objects can be more easily identified than stationary ones. Searchlights, when used for defence, should not be exposed too much, as they might give away the position and actually guide the enemy when making a night attack. On the other hand, the dazzling light is most disconcerting to attackers, and has the effect of distorting ranges. Cases have been known where a range of 8,000 yards was taken as 3,500 yards, due to the blinding effect of a searchlight. For this reason it is a difficult matter to damage a searchlight by gunfire.

In coast defence stations and fortresses, numerous searchlights are installed. More powerful lights can be employed in such cases than in the field, owing to the possibility of obtaining practically an unlimited supply of electrical energy from permanent power stations. In the field the movements of the projector are, as a rule, controlled by hand, but in fixed stations small electric motors operate the vertical and horizontal movements of the lamp. The movements of the searchlights are generally controlled from directing stations, which are made as inconspicuous as possible and placed on a higher level than the lights.

The electric motors, which operate the movements of the projector, are controlled from the directing station, which is in telephonic communication with the officer responsible for the tactical employment of the lights.

In the fleet, searchlights play a very important rôle. By the aid of them it is possible to repel torpedo and submarine boat attacks on dark nights. The blinding beam of light, well handled by the defenders, increases the difficulties of attack enormously. After the beam of light has been turned away, it is difficult for the attacker to see again accurately, owing to the impression left on the retina of the eye.

From various accounts it appears that the Zeppelins are fitted up with searchlights. These are used probably for reconnoitring purposes and locating targets for bomb dropping. The difficulty of fitting aeroplanes with powerful searchlights is considerable owing to the impracticability of generating sufficient electrical energy.

Quite recently there has been introduced into the Swedish Army an oxy-acetylene searchlight. In this light a mixture of acetylene and oxygen is burnt which produces a colourless flame, having a very high temperature. This flame is allowed to play on a small pellet of ceria, which becomes incandescent and emits a powerful light. The acetylene is carried in liquid form, and the oxygen is compressed in a small steel cylinder. The outfit is extremely portable, and sufficient gas is carried to keep a light going continuously for twenty hours. It seems to have a future, especially for portable field searchlights.

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AND
LAND & WATER

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PUBLISHED WEEKLY



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[By Joseph Simpson, R.B.A.]

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A GLIMPSE OF WAR

A LA BAYONETTE

By W. L. GEORGE

THE word went round. It was shouted, and yet in the storm of sound was as a whisper. Private Denny just nodded; his neighbour bellowed into his ear and handed on to the right the news they all guessed, though they knew it not yet. A very little his heart began to beat with an excitement in which there was haste, lust, and a little fear. As he filled his magazine he smiled. It was a broad smile, a smile of memory, for as he secured the bayonet more firmly he noticed a long black streak upon the stock which had dried there in the night and stained the wood dark. For this was not the first time he had used the bayonet, and he looked at it fondly, trying the point. He thought of the French who called it *La Rosalie*. "Sentimental tosh!" he thought, and then softly caressed the blade. Readiness increased: his neighbour on the left cast away his overcoat; another felt nervously at his puttees. They looked knowing, they laughed a little nervously; they did not try to speak, for the broken roar of the guns which it seemed could not increase . . . yet increased.

Already the sun had risen in the pale morning, gay with laughter, balmy with soft airs. Private Denny's cheek was caressed by a wind tenderer than any woman's hand. He breathed of that air full of the sweet scents of new grass, breathed deep as if to gain strength from earth. But all the time he was conscious of the things which passed over his head, invisible and yet present in movement and in sound, little eighteen-pound shells, glittering no doubt in the sun for the angels to see, not presences but half hisses, half screams, little things that burst not far away, hardly a hundred yards, in a fume of green smoke and a spatter of stars . . . and bigger things, too, of which he was just conscious by the rushing of their wind, things that fell just ahead there, in the German trench, fell wetly and dully, raising a pillar of smoke and earth. He knew, and he knew, and still his heart was beating. As if with ears not his he heard the sergeant at the periscope who watched the fall of the explosive shells: "That's got 'em! Good! Got 'em again! Half a dozen more like that. . . . Steady boys! Steady! It won't be a minute before. . . ."

He did not hear the voice any more, for his body was filled by the sound of the whistle. It came, sudden, imperative. So shrill that it burst through the dullness of heavier sounds just like, thought Private Denny, a bayonet. . .

The whistling did not last a second and it lasted hours, for it was born in a wilderness, an earth on which all other sounds had died. For quite suddenly the little shrapnel and the big shells that swung overhead, as the ghosts of birds, flew no more, and in the emptiness was nothing now but the needle sting of the whistle. Private Denny did not know how it happened: perhaps the whistle had jerked him to his feet, seized him by the neck, with all those others of his battalion, hurled him out of the trench upon that soil in front, so oddly pock-marked everywhere with holes.

He was running in the silence. He was separate from his body, and hardly knew what he did; his feet registered a crumbling of the earth all torn with shell, rose up painfully from steel shards. The light sun was in his eyes and he was all aglow as he ran on stumbling, by instinct rather than intent maintaining his place. There were men to the right and left, brown shadows, ordinary men who played billiards and went to church, and got drunk, just like Private Denny; but here they were, running on, rather bent, hardly thinking of the wheezing sound the bullets made as they buried themselves at their feet. A man fell in front of him . . . he stepped over and forgot him. It seemed so far, so long, though only twenty seconds, and he ran on as if bound for a paradise, anxious to see, to feel something other than this soft air.

And then, at his feet, so near that he almost fell, he saw the German trench. Its trim edges torn like a saw, its roofs of timber and turf fallen in, the timbers, shuffled and knotted together like ropes, a ruin of black holes full of water, mounds of earth shored up into incredible pillars. He leapt. With all those other brown shapes he struggled as in a dream, lost among the walls that hung over him ready to fall, angry because here was nothing for him in this place, pricked every-

where with bullets, laid bare to its very entrails by explosive shell. He stepped forward, he recognised a difference of ground. He understood, he had trampled a body that lay there, and before him was another. Driven on, without knowing why or how, he made for the traverse. He tottered in this lake of water and earth where many grey coated things lay still or rolled uneasily, broken, blood-soaked, unlike men. An order came to him; he seized his spade to begin repairing his section of the parapet. He stuck it into a mound of earth at his feet to clear it away. He started back, for half the mound fell away, and there came out a grey-clad arm with a hand that, straight-fingered, clutched at the air.

But he did not dig, for from the left he heard the crackle of rifles. He obeyed an order that he half understood. A trap then! The trench not wholly dominated! A spurt of rage filled his heart and a sudden heat filmed his eyes.

They could not get into the traverse this way, for the earth had fallen in. The sound of musketry in his ears, Private Denny found himself following his sergeant, cautiously crawling along the ground towards the traverse on the left. It seemed so long, and stones and steel shards hurt his hands, tried to stab him in the breast. But nearer and nearer they came, silently. His heart leapt, for here was the edge of the traverse . . . he saw the long line of spiked helmets a little below.

There was a cry, a shout, and Private Denny had joined in it, felt it come out of him, solid and sonorous as stricken brass. And now with the others he had flung himself into the traverse. It was narrow, he fell almost against his enemy, so close that he could not use his bayonet; he had a confused sense of rifle fire suddenly dying away, of a new atmosphere that was all heat and effort, hand to hand. He could hardly see anything because he saw too much, flying shapes, things that struck at him, things at which he struck. He was conscious only of movements and of feelings, of being thrust against a wall, of striking back at some heavy phantom and hearing the crunch of bone against the butt of his rifle. They were all about him, grey shapes and brown shapes. A bullet hissed past his ear. He struck out savagely into space, and his bayonet entered the wall of the trench . . . he swore. There were things about his feet too, soft things that struggled and moved . . . then the air seemed to clear, and, quite suddenly, as if he had taken a section of the battle, he was alone with a single enemy. An extraordinary clarity came into his mind, and for an interminable second the long Englishman with the hard mouth, and the Bavarian, much shorter, much heavier, gazed into each other's eyes. They were watchful, they were nimble, they were like cats about to spring. Private Denny felt himself dodge from right foot to left foot as if he were sparring.

The Bavarian struck straight out. Denny got the bayonet upon the barrel of his rifle, and it fled aside past him, incredibly fast and brilliant, like a pike in a stream. And automatically he lunged back, straight towards the thick grey body that stooped. He failed as the other leapt aside . . . he cried out, for carried away he had fallen right against his antagonist, so near that he could see the different colours in his eyes, feel the heavy warm weight of him. For a second they remained gripped and swaying. Jaws locked, with eyebrows knotted, they sprang apart, still watchful, feinting with their weapons, heads down. They struck again, and the rattle of the rifle barrels was as that of castanets. Private Denny gave a little growl, for suddenly the Bavarian, lunging on, pierced his sleeve, and he felt the sharp sting of the bayonet along his skin. He was not sparring now, but as the other half-fell, carried away by his rush, Private Denny stepped aside and, raising his weapon, brought it down straight against the fleeting grey side. . . .

He was thrilled with an excitement that held hardly any horror as the speared body resisted. He thrust on, deeper and deeper, desiring only one thing, to drive in the steel yet deeper. . . . and for a second he held him pinned, all his body shaking with the quiver that ran through from his stricken foe up the knife and along into his arms. He was taut, wanted to hold the thing so pinned for ever. His lungs quite narrow, his hands rigid as dry bones in the intensity of his clutch, he so remained for a second. Then suddenly lax and shivering, he withdrew the bayonet.

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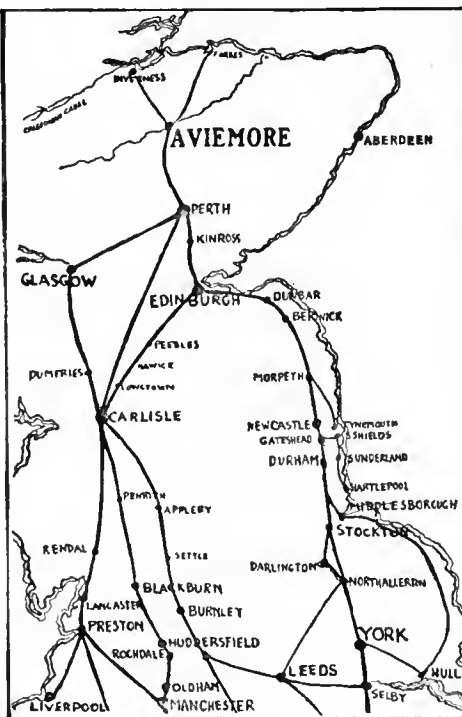
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THE WAR BY LAND.

By HILAIRE BELLOC.

NOTE.—This article has been submitted to the Press Bureau, which does not object to the publication as censored, and takes no responsibility for the correctness of the statements.

In accordance with the requirements of the Press Bureau, the positions of troops on Plans illustrating this Article must only be regarded as approximate, and no definite strength at any point is indicated.

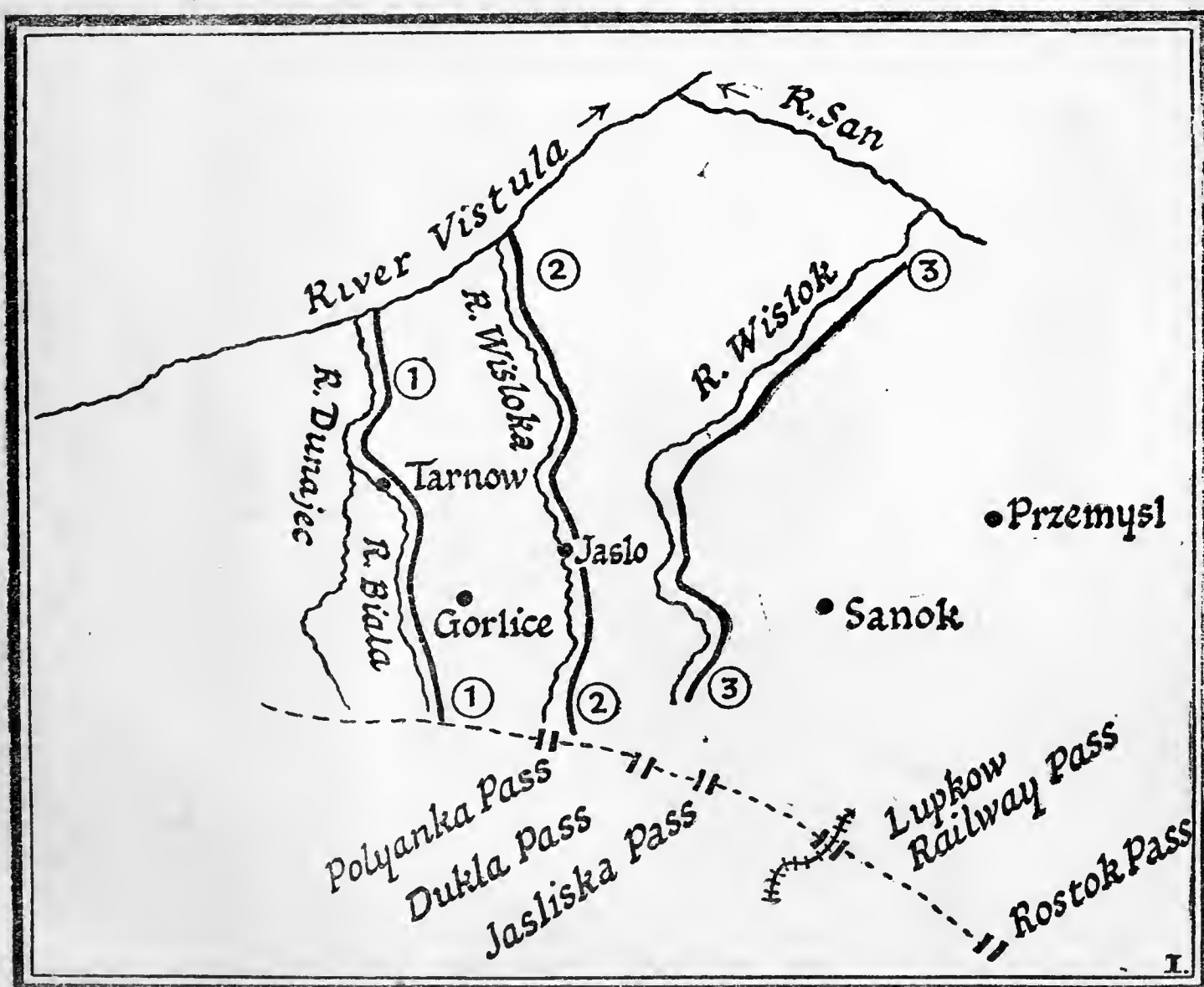
THE news this week ill repays analysis, because while it is of great importance, it is not yet definitive. The great Austro-German movement in Western Galicia is still upon a confused front, and we cannot even be quite certain what that front is.

The French movement north of Arras is in full progress at the moment when these notes must cease, and beyond the bare statement of the official communiqués there is no general result to determine.

Of the Dardanelles, perhaps the most important point of all in the campaign at this moment, and certainly the most important from the British point of view alone, we have been told nothing since the landing, or, rather, nothing of a sort which enables us to define positions and to analyse movements. The last declaration of Lord Crewe in the House of Lords upon Tuesday night, just before sending this paper to press, was no more than a reaffirmation of the success of the landing and the repelling of the enemy's attacks upon the line already formed.

The German raid into Courland, probably a purely political move, offers no ground for analysis either. It is not directed towards any definite result as yet. Libau is occupied, but with what object this cavalry movement (for it is in essence no more than a cavalry movement, though supported by a brigade of infantry, probably dependent upon motor traffic) has been undertaken there has been no sign, and, as I have just said, it probably has no direct military object at all.

What is of real importance this week, and what I shall attempt to go into fully, is the orientation of the enemy's energies at this moment towards a moral effect: his increasing reliance upon what he believes will check the intervention of neutrals and produce a moral disarray in the civilian opinion of the Allies. That is of real importance for us to grasp. It connotes a certain state of mind in the enemy's higher command which is well worth recognising, and it must be stated plainly with details before we can grasp its full significance. I shall deal briefly, there-



GENERAL PLAN OF THE OPERATIONS IN GALICIA.

fore, this week with the military movements, inconclusive as they still are, and which lend themselves very little to illustration. I shall deal at some greater length with the point I have just mentioned.

THE OPERATIONS IN GALICIA.

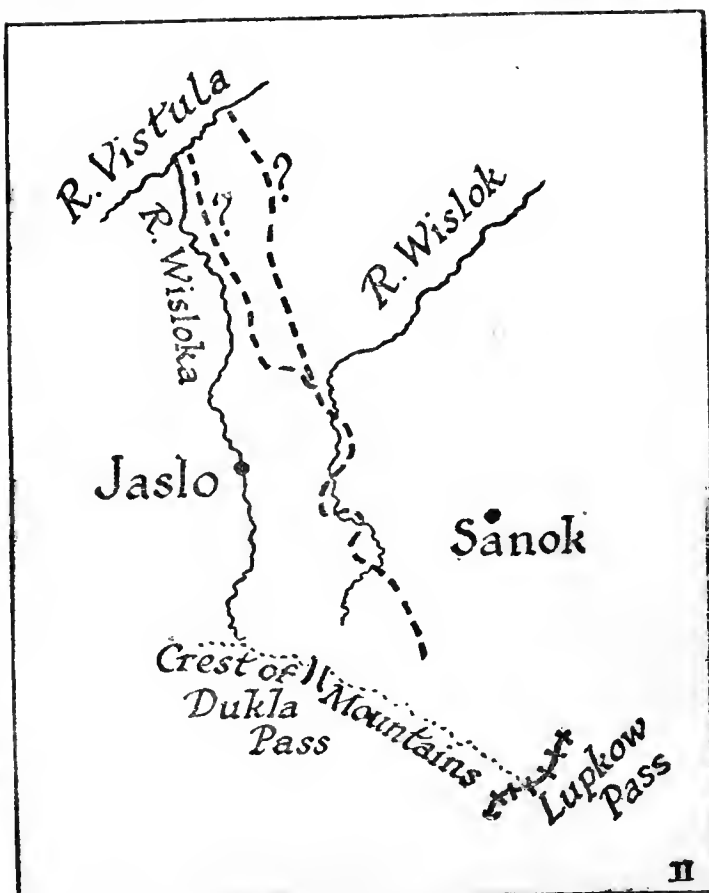
The concentration of so many of the new levies, Austrian and German, with older forces drawn from elsewhere, upon the front east of Cracoe, and the blow they are delivering against the Russian "screen" which was defending operations in the Carpathians to the east, is proving, as the days pass, of greater and of greater importance.

The conjectures to which the first news of this great action in Galicia gave rise have proved accurate enough. The Western front of the Russian armies in that province has retired over a belt of thirty to thirty-five miles, more towards the south than towards the north. The northern passes of the Carpathians have consequently been abandoned, at least the three road passes of the Polyanka, the Dukla, and the Jaliska. The Lupkow road and double line of railway pass and the ridge on as far as the Rostok is still apparently, at the moment of writing, in the hands of our Ally. How far the abandonment of the crest of the mountains must proceed will obviously depend upon the limits to which this retirement of the Russian Western front continues. But the margin is not a very wide one, as the map on the preceding page will show.

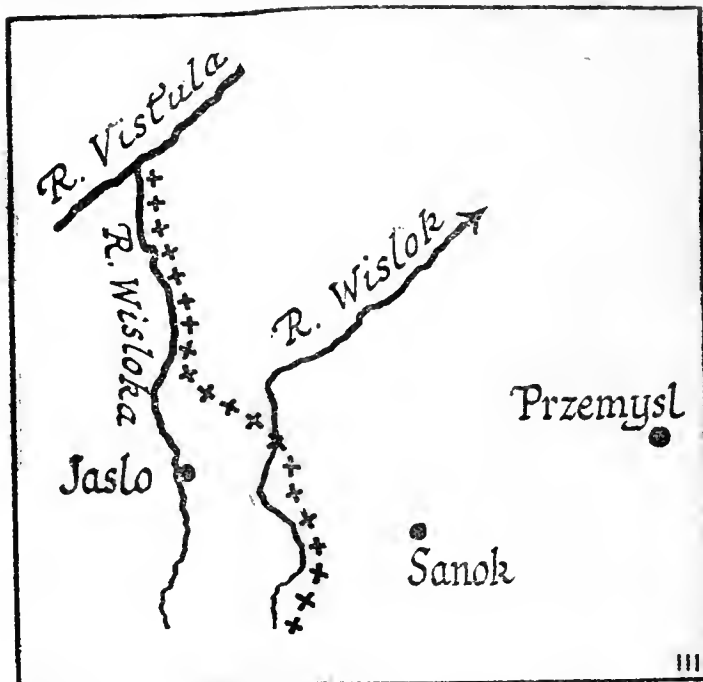
The original line held by the Russians ran, as my readers know, from the Vistula up the Dunajec to the point where the Biala falls in. It then ran up the Biala to the crest of the Carpathians, corresponding to the line marked 1 on this sketch map. The next defensive position behind this was the line of the Wisloka, marked 2, and it was pointed out in a previous article that if the line of the Wisloka were taken up by the Russians after their retirement, that would certainly mean the loss of the Polyanka, and probably of the Dukla. Now it appeared from the last communiqués that the line of the Wisloka had been passed—upon the south at least—and that at one point, the next parallel valley, that of the Wislok, and had been reached by the Austro-German advance, and that these are attempting to reach Sanok.

But the Wislok does not form a true position at all for the purposes of guarding the Russian armies in Galicia. It bends right back eastward. It falls into the San, not the Vistula, and it is the line marked on Plan I. with the number 3.

It would therefore seem as though the check which our Ally will attempt to give to the advance of the enemy would not follow a river line at all, but would cut across the two valleys in some such fashion as that indicated by the dots on the second sketch map. That our Ally will be able to hold this line and remain upon it is doubtful. It is a fluctuating line not prepared. It could only be held in a few selected places by rapid entrenchment. It would hardly stand against the superiority of heavy artillery upon the enemy's side (of which more in a moment) when the big pieces should have been brought up over the intervening belt. But what would be a perfectly possible line is all the line of the Lower Wisloka, then a cut across to the Upper Wislok, and the following



of that stream in the mountains so as to bar the way to Sanok. Such a line would run as the line of crosses runs on the subjoined sketch, and might be tenable. But before such a line could be held,



the Russians would have to recover as a whole the lower line of the Wisloka.

Now we do not know exactly where their line runs in connection with the lower part of this stream—that is why I have upon my second sketch marked two lines of dots, one fairly close to the river, the other well behind, and put to each a note of interrogation. If they have been thrust back as far as the second line they could hardly recover so broad a belt against an advancing superior force, with a particular superiority in heavy guns, or, after having advanced across it, consolidate the whole ground lost between this and the Wisloka, or hold it firmly after such a counter-offensive. Yet, if the Russians do not hold the Lower Wisloka, at least, and the Upper Wislok, it is difficult to see what natural feature they can adopt as a foundation for their new line. The Wislok itself bends so far east that it turns the Galician Plain

altogether, and though it is true that any well prepared line of trenches is nowadays a position in itself, without any natural feature to support it, on account of the strength of the modern defensive, we have no indication that such a line has been prepared across the peninsula between the Vistula and the San, and in the country north of the Lower Wislok.

If any position has been prepared in this piece of country we shall see the Russian line gradually consolidate upon it and check the forward movement of the enemy. If none has been prepared there are only two alternatives: a fluctuating battle as the Russian reinforcements arrive, the recovery of the Wisloka line, and the consequent protection of the Russian positions upon a portion at least of the crest of the mountain west, or a falling back of the whole line, the abandonment of all the crest and of half of Galicia as well. And which of these two events we shall see, only the future can determine.

It must, of course, be insisted upon here, as it has been insisted upon in the case of every retirement or fluctuation of the line upon the east or upon the west, that the problem before the enemy is not the clearing of a particular bit of territory, or the relieving of the pressure upon a particular line, even upon a line so important as the crest of the Carpathians; the one essential which he must do, and which, for his own success, he must do in quite the near future, is to break the eastern or the western line. Until he has done that his strategy, in the largest sense, has failed.

The exact position of the fluctuating double front between the Austro-German advance and the Russian retirement upon Saturday, May 8, would seem to be somewhat as may be gathered from the accompanying sketch. The line



started at that moment from the Vistula N. or N.E. of Mielec. It then ran back almost due south until it approached the Wisloka in the neighbourhood of Debica, defended portions of that river line, but abandoned it before Jaslo was reached (Jaslo was in Austrian hands on the Friday night), and struck the Wislok near Krosno. The Germans established a crossing beyond the Upper

Wislok near Krosno, but no more, while the Austrians do not appear to have crossed the Upper Wislok nor to have approached nearer to Sanok than the line of that river.

It is evident from all this that the strength of the blow has been delivered by the German right against the Russian left of the line, and that the whole front has swung round from north and south to north-west and south-east. The retirement has not greatly affected as yet the position of the Russian line north of the Vistula, but it has rendered untenable the positions of which we have spoken, rendered extremely precarious the remaining hold upon the ridge between the Lupkow and the Rostok, and has not yet established itself in any permanent fashion.

More important, to our judgment, than the future of the campaign on this front and the exact line held for the moment by the two belligerents is the nature of the Austro-German success, and this, it cannot be doubted, is due to a great superiority in heavy artillery upon the side of the enemy.

Now let us examine the causes of this and see what chances there are of the situation being reversed for the future.

The superiority of the enemy in heavy artillery on this front is due to two things.

First, that he has been able, just as we have, during the winter months, to construct further heavy pieces.

Secondly, that he has been able to munition these and to provide an accumulation of shell with which to effect his great bombardment of the last two days of April and the first of May. The Russians have not been in that position. They have suffered from lack of equipment of every kind and from lack of munitions right through the winter under a rigorous blockade, and from the fact that their own powers of construction were more limited than those of the industrialised western and central nations of Europe, as well as from the fact that their more limited railway communications hampered the bringing up of such supplies as they had.

The situation, due to this starvation in munitions, which had been very serious indeed in February, was somewhat relieved during March and April by the appearance of munitions procured through the Far Eastern ports and coming in by the Trans-Siberian Railway.

Now, in the middle of May Archangel is also open. But Archangel, though not so far off as the Far Eastern ports, is a good thousand miles away from the chief front, and of these thousand miles 300 were, when the war broke out, a narrow gauge railway with very little rolling stock—the section which runs from Archangel to Vologda.

That is half the meaning of the great experiment in the Dardanelles.

If the Dardanelles could be forced Russia could, in a far shorter time than through any other avenue, be munitioned. Until she is fully munitioned (especially in heavy artillery and shell therefor) the handicap against her is exceedingly heavy.

Unfortunately, it is not only in heavy artillery munition that this handicap is apparent. The first full accounts of the fighting, as they have appeared in the Hungarian papers, reached England only two days ago, and one of the most striking features in those accounts was the description

of how, in the original crossing of the Dunajec, the Russian field guns failed from lack of ammunition within forty-eight hours.

The difficulty of equipment of the Russian reserves—which is perhaps the most crucial difficulty of all—has been in part got over, but the munitioning of field guns, as we have seen, and particularly of heavy guns in a sufficient quantity, is a problem apparently still unsolved; and it is this which lends its gravity to the struggle now taking place in Galicia.

We must further remember that one feature present in the depth of winter has now, happily, been eliminated, and that is the inferiority in mere total numbers of the Russians to the enemy along this Eastern front. The equipment of reserves in sufficient numbers to redress the balance was already apparent by the end of April.

It is not everything, but it renders the position less acute than it was when the great German concentration was descending upon Warsaw in the middle of February.

THE CAVALRY RAID ON LIBAU.

Nothing has been said in these notes hitherto of the new German raid through Courland—that is, along the Baltic Coast—because no military importance appeared to attach to it. This judgment—or, rather, conjecture—still holds. No critic can say that a movement of cavalry and horse artillery, with a small proportion of infantry—probably dependent upon motor traffic—operating at a great distance from the main armies, attacking nothing vital, even politically, in the enemy's state, is an operation of war which can possibly be read in conjunction with the general military aims of the campaign. It is a raid.

If we try to estimate the subsidiary objects in view when this raid was planned they seem to be three.

First: The impressing of Russian civilian opinion, through the coincidence of so deep a thrust, with the new violent and successful effort of the Austro-Germans in the southern part of the Eastern field.

Secondly: The impressing of neutral, and especially of uninstructed neutral, opinion in the same direction.

Thirdly: The obtaining of munitions and supplies.

No Russian artery of communication is cut by an offensive of this kind; no forces sufficient to effect any permanent work are present, but with these three objects, and especially with the second, the whole thing exactly fits.

It must be remembered that the towns of the district raided are very largely inhabited by German Jews, with sympathies naturally strong in favour of Germany and opposed to Russia, and this is particularly true of Libau. That is a state of affairs which would facilitate the temporary occupation and the material results expected from it. Beyond this there is really no more to be said.

THE DARDANELLES.

We have this week upon the Dardanelles no news upon which any judgment of the advance of the operations can be based. There is no British official communiqué which gives us the smallest detail. We may conjecture, therefore, that the allied line is still upon the slopes at the foot of

the Achibaba position, passing through Krithia, or at least we have no news that this position has yet been carried.

It is evident from the nature of the operations that the greatest possible secrecy must be observed. The authorities have permitted very full accounts to come to England of all that accomplished first stage in the business—which was also, perhaps, the most difficult—the landing and the getting a footing upon all the southern end of the peninsula. There is nothing to do but to wait patiently for further official news, which will give us the progress of the operations later on. Meanwhile it may be suggested that probably the interval corresponds to the landing of further munitions and particularly of heavy pieces.

The great difficulty in an operation of this kind is the landing of the first advance troops. Once these, supported by the fleet, can establish a position from sea to sea across the narrow piece of land, the transports can at their leisure put on shore the heavy pieces of munitions and all that the expedition will need, acting securely behind the screen of the troops that have established themselves.

It is remarkable enough that we do not receive news of the operations from German sources either. After the first few days, when the usual accuracy of judgment in Berlin upon military affairs in this war was misled by the absurd Turkish communiqués, there seems to have set in a mood of caution, and the last German newspapers available will not commit themselves to the future of the experiment in the Gallipoli Peninsula, upon which so much of the future of the war should turn.

The summary of the Dardanelles position remains exactly what it was last week. The end of the Gallipoli Peninsula is solidly held. Krithia is the centre of the allied position upon the slopes of the Achibaba ridge. The enemy position along the crest of the ridge still stands. Until the attack upon this enemy position has developed, until we know the result of that attack, our analysis cannot proceed.

THE OPERATIONS NORTH OF ARRAS.

Upon Sunday and Monday, beginning probably with the Saturday before, the French developed very heavy pressure upon the line just south of the British position—that is, upon the line between La Bassée and Arras. The Germans believed them to have advanced with something well over a hundred thousand men, and possibly as much as four corps, and the effect of that advance so far has been the gain of a belt which at its maximum is over two miles broad, and of some three thousand prisoners, with a corresponding number of machine guns—50. Of field guns only quite a small number has fallen into the hands of the Allies at the moment of writing: less than a dozen, but even this means that the first positions of the enemy were carried. There cannot be, in this particular region, any intention of breaking through. It is not the place for such an attempt. The character of the operations does not point to it at all. What is probably the object of the move is to relieve the rather serious pressure which was beginning to be felt just to the north upon the British trenches. Into what it will develop we cannot tell, but the engagement is proceeding at the time of writing. It cannot but draw down

from the north some portion of the enemy forces now operating east and south of Ypres, and when it has thus relieved the pressure upon the northern part of the allied line its task will presumably be accomplished. But it is not here that the coming offensive will fall, and, viewed in the light of that great expectation, the whole of this considerable piece of work is of minor importance.

THE ENEMY'S ESTIMATE OF THE NEWLY-TRAINED BRITISH LEVIES.

Among the most important factors in the future of the war is the estimate the enemy may make of the new British formations. More important still, of course, is the real value of these new formations, because events will in any case correct any erroneous estimate the enemy may make. But the enemy's estimates are none the less of value because according to them will his plans be laid. It must be remembered that these new formations are just becoming a principal character in the war. They will, henceforward, be the chief source of recruitment in the West. It is the British recruiting field (in which term one includes, of course, the Colonial troops) which is the most elastic and the largest, for the French have put in everyone they could, and their recruiting field only consists now of the young men growing up to military age this year.

Now, it is important to note that the German estimate of the new British material seems to have changed very sharply in the last few weeks, and that the enemy's respect for it has as rapidly increased. There has already been wasted during this war so much ink in the alternate efforts (no doubt with laudable objects) to raise and to depress the spirit of civilians, according as it was thought that a certain spirit was needed to win the war, or another spirit to promote recruiting, that one feels a natural reaction against anything which could savour of rhetoric in this connection. But it is the sober truth that the new British formations appearing in the field, with whom one includes the Colonials, have had an effect in Germany which is appreciable not only through private reports but also through the printed descriptions of the fighting.

It is not remarkable that this should be the case, but it is extremely important for us to appreciate that it is the case.

It is no wonder that this change between the German opinion unexperienced and the German opinion experienced should have taken place; and at the junction of the two national organisations north of Ypres three weeks ago, where there was a medley of races and units more heterogeneous than upon any other front in the whole war (Zouaves, Belgians, Coloured French Colonial troops, French Marines, British Colonial troops, &c.), it was the action of the Canadians which necessarily impressed itself most upon German observers.

The story is now an old one. Until we had "Eye-Witness's" full description it was not quite clear what had happened, but now we all know the story pretty thoroughly. The French retirement, under the effect of the new gases, left a great breach in the line. The Canadian left was completely isolated, and at one moment there must have been a gap of many hundred yards, perhaps a thousand yards or even more, rapidly increas-

ing, between the extreme Canadian left and the right of the French line. There had not been a hole torn through the line at the junction of the two organisations, but the position was like that created when a blow breaks a slat of wood. The part receiving the blow breaks back and away from the part just below the point of impact, which part still stands on the old line. The old line had faced roughly east and west, and the gap between the Canadians and the French troops faced north and south. If the Germans could have rushed that gap they would have broken the first line round Ypres. That they did not so rush it was due to the promptitude with which the Colonial troops swung round, but much more to the tenacity they displayed in resisting an enormously superior enemy when almost enveloped.

If two points may suffice to illustrate the quality of this action they may be cited as follows:—

First: The heavy guns abandoned in the retirement far beyond the line were recaptured—that is, a strong counter-offensive, assumed on the field itself immediately after the first blow and against greatly superior numbers, was undertaken and successfully carried.

Secondly, and much more important: While certain units suffered losses up to seventy per cent. in killed, wounded, and missing, the organisation as a whole remained and the line was not broken.

You get much the same thing in the case of the Dardanelles. Though it was a regular division that did perhaps the hardest work, the landing (upon the impossibility of which Berlin had really seriously counted) was also effected by great numbers of the new troops.

Though it will be a very heavy asset in our favour if this opinion is maintained—and everything points to its being maintained—we must remember to estimate its causes and to see its real nature. It is partly due to the excellent physical quality of the human material employed. No one could have looked at the new armies without appreciating that point. It is partly due to the fact that this siege work luckily demands qualities in which old and new troops do not greatly differ so long as the moral is sound, and, further, has the advantage of seasoning and training the men who have recently come in.

Next, we note that if the provision of officers for very large new formations is the great difficulty, which we know it is, yet these new formations are coming to the war at a moment when the enemy's losses in officers have been far greater than anything he had allowed for, and in which his *cadres* are seriously and unexpectedly weakened. To some extent the very delay in equipment and the corresponding length of time during which many of the new formations had to be kept under training was an advantage in seasoning.

Lastly—a factor not to be despised, though it is often exaggerated in the history of war—the spirit with which new troops will go into action is increased by every blunder which the enemy makes in what I have called in an earlier part of this article his "political policy."

THE POLITICAL OBJECT OF THE ENEMY.

It is in this dearth of really decisive news throughout the whole field of the campaign that

one naturally turns to the sensational and, in a military sense, useless actions of the last few weeks, and particularly of the last ten days.

The public mind naturally and instinctively turns to them, as, indeed, the enemy intended that it should. But it might be imagined that an analysis which deals only with the purely military conditions of the campaign should leave aside acts which are less and less military in their conception and execution. In what way (it may be asked) does such an action as the shelling of Dunkirk, or the raid on Liban, or the German Emperor's telegram to his sister, or the sinking of the *Lusitania* concern military history? One might as well, it would seem, drag in the guillotine at Arras, or the speeches of Robespierre into a military narrative of the early revolutionary war.

I do not think this criticism is sound. As it seems to me, the enemy's recent actions, which have quite evidently no military object proportionate either to the expense of their undertaking or the risk he runs by them, and many of which have no direct military object at all, are none the less well worthy of note, and very useful in the analysis of the purely military side of this campaign.

We are always to ask ourselves whenever an enemy command does anything, from the movement of a battery to the sending of a political telegram, why he does it, and how his action can possibly bear upon the conduct of the war. His action may often be foolish; we may often see it to have been a blunder; but it is never quite meaningless.

Let us, therefore, begin by contrasting the operations of the Allies in the West with those of the German forces, segregating these two opponents because it is between their methods that the contrast most severely applies.

The Allies in the West, as the turn in their numbers has gradually come about, as they have provided themselves with more and more heavy artillery and with a larger and larger accumulation of munitions for the same, have with every passing week concentrated more and more clearly upon the purely military objects of the war.

For instance, the first use made by the French of their new security in heavy pieces was to push forward in a belt of the Champagne until they commanded the lateral communications of the enemy between Argonne and Lille. That done, they halted. Next they worked south and north of the St. Mihiel wedge, up to Les Eparges on the one side and the neighbourhood of Freilun on the other. They here also could bombard the points of junction of his lateral communications. They pushed forward to the heights north and east of Pont à Mousson until from those heights they were in range, though distant range, of the chief southern communications of Metz. In the Vosges, at very heavy expense, very slowly, but with continuous determination, they pushed on until they occupied similar positions, from which they dominated at long range the main railways of the Alsatian plain. That done, they fell back upon the defensive.

Their air service, over and above its main work of observation and of "spotting" for the heavy pieces, dropped bombs upon certain headquarters (especially the great general headquarters at Mezières), upon the railway junctions (work done with peculiar success by the British Flying Corps in Belgium), upon the airship sheds, and upon stores and munitions. It is particularly to be noticed that all this process of purely military

work became more and more restrained, as it were, was more and more exactly directed towards purely military objects as the winter passed into spring and as the moment for an offensive approached. The whole thing has been aptly compared by Colonel Maude to the laying of foundations by an engineer before he builds, and the nearer the moment has come for erecting the walls upon the foundations the more minutely and thoroughly has the allied work concerned itself with those foundations alone. There has been less and less, as the weeks passed, of chance blows or of tentative adventure. There has been a steadier accumulation of men and of munitions, a somewhat increased rigour in the blockade by sea, and, as was perfectly right, a somewhat increased severity in the censorship.

Now, compare with this process and its cumulative character the corresponding action of the enemy.

He begins as early as December with announcing an indecisive action before Warsaw, which all but ended in a disaster for himself, as comparable to a defeat of the Persians by the Greeks. He later announces, after the local defeat of one army corps, the total destruction of the tenth Russian Army. He proclaims that the special bombardment of Rheims is an act of retaliation. He drops bombs upon watering-places along the East Coast, where—as almost everywhere in England nowadays—there were troops billeted, but which he carefully styles as being "fortified places." He announces that he will sink merchantmen by submarine, but at first he attempts to save the crews. He proceeds to a policy of sinking them with or without saving the crews, indifferently. He announces his great offensive in Galicia in terms of extreme rhetoric which do not correspond with the facts. He makes a raid upon the Baltic coast of Russia which can have no direct effect upon the campaign as a whole. He sends out more than one bombastic telegram to reigning families allied with his reigning house and takes care that they shall be published abroad. He shoots at extreme range, without aiming, large shells into Dunkirk, hitting at random, and with no conceivable military object. He sinks the *Lusitania*, producing an effect, one side of which, its horror and its novelty, must bear no relation to the comparatively small cargo of munitions thereby prevented from reaching his foe, and his Press, which, even where it is purely financial and cosmopolitan, like the *Cologne Gazette*, acts under orders, and particularly emphasises that side of all these actions which is calculated to affect, not military, but civilian opinion.

I would even go so far as to say that the use of poisonous gases, which he has developed, falls under the same category. That they are efficacious in driving men from trenches we know. But there is something else. The thing could have been done with chemical agents that would not have the peculiar effect of these poisons. Again, it is an agency expensive in preparation and in time. Again, it can only be used under special circumstances of weather. Again, it is an agency that has only been used on one tiny fraction of his whole line.

Now, I am not denying that in all this the enemy is putting his very fullest military effort forward as well. My point is that the most remarkable part of his recent activity has been this appeal to the nerve of neutrals and of belligerent civilians. When he dropped a few shells

into Dunkirk the other day from a range of over twenty miles, with his guns at an extreme elevation, with no earthly chance of hitting any one military target, he produced in our Press exactly the effect which he desired. There was first a nervous fear lest his fleet might not be in the North Sea. Next, that exceedingly naïf astonishment that heavy guns could deliver shells at range so great. When he sank the *Lusitania* he excluded for the moment from the attention of most neutrals and of all civilians the very much more important military developments of the few days succeeding that tragedy. And no wonder, for it was a thing more awful by far in its effect upon the imagination than the much more disquieting advance of the Austro-Germans into Galicia.

The whole thing may be compared to the action of two boxers, one of whom should confine the whole of his energy to the boxing while the other produced appeals time and again during the match, or sought to impress the spectators by blows that drew blood. The expert would, perhaps, in too great a degree confine himself in such a match to the way in which the mere chances of the game, according to the rules of its art, were turning; but the spectators, in proportion to their ignorance of that art, would have their attention directed to the side issues of disgust or of protest.

What does this obvious and increasing orientation of the enemy's efforts towards political effect mean? It means that Prussia, of the two weapons upon which she has always relied, is now relying more upon the terror of the civilian population than upon the purely military art. She is still relying upon both, but relying more than ever upon the first. And that means, in its turn, that she believes this moral effect upon the civilian population to be becoming more and more her best chance of obtaining an inconclusive peace.

I am not here concerned with whether her calculation is wise or unwise, still less am I concerned with an estimate of its morality. I am only regarding the matter as an index of how the war stands in the mind of the German General Staff and of what they probably conceive the future to be. And I discover that index to point towards an increasing doubt whether they can by military means alone achieve what has become their somewhat modest aim, of saving the State. To acquire an hegemony in Europe, to eliminate the French from the list of the great neutral Powers, to forbid Russia future influence in the Balkans, to keep the Italian forces vassal or ally, to exploit economically the Turkish territory in Asia—to do any one of these things in even the remote future, no one of their directing minds is so foolish as to hope. The whole plan, carefully matured and diligently prepared, has failed. In one respect, indeed, and a most important one, that plan may still conceivably be pursued, I mean the outlet of energy which would concern itself with a special duel against Great Britain: the surpassing of British seaborne commerce by German, the acquirement of Colonial possessions at the expense of Britain, and the exploitation for the future of those particular economic fields in which England has gained supremacy. It was but one chapter of the whole programme, and, save to those who had least grasp of reality among the North Germans of our generation, not the most important chapter. The most important thing by far was to become the chief Power in Europe. The

attack on Britain would follow only as a natural course. But the attack on Britain, once conceived as a form of slow and necessary successful maritime and economic competition, has now become the only feasible part of the national ambition. It can be pursued at the price of an inconclusive peace. If the German organism is spared, if the Prussian Empire remains in being after the war, nothing else of the programme will stand, but an attack on Britain segregated from all the other lost ambitions is still permitted. It would be an attack delivered no longer by the chief Power in Europe, only by one Power among many, and that Power degraded and weakened as compared with its great Continental neighbours. But the attack *could* be delivered if an inconclusive peace were patched up, and that inconclusive peace, the enemy believes, can best be served by concentrating his moral effects upon neutral and civilian people, but particularly against the opinion of this country. That is the moral of all that crescendo of horriification which has used poisonous gases against the extreme of the British line, which has shelled Dunkirk at twenty-two miles (and lost a gun), and yet not shelled Nancy at fifteen, which has sunk the *Lusitania*, and which proposes to burn, one after another, a group of civilian habitations in these islands, and anyone who chooses can draw his military lesson from so strange a perversion of the mind. It is in clear lineal descent from those lesser massacres of civilians and those experiments in terror which marked the campaign of 1870-71.

W. B. Shaw

AN ELEMENTARY GLOSSARY.

(Continued.)

THE chief weapon in modern war is the *missile*, just as the chief weapon in ancient war was the arm properly so called, the thing held in the hand, the lance or the sword.

The missile is obviously an extension of the lance or the sword. It strikes a blow as does the lance or the sword. The only difference in its action is that it strikes a blow beyond the reach of the human agent responsible for its discharge.

With the insignificant exception of certain trench devices, the modern missile is discharged by the explosion of chemical compounds of a sort varying in the different services, but roughly combined in English under the term *powder*.

The charge thus used for driving the missile forward and throwing it at the enemy is called "*the propellant charge*" (to distinguish it from a bursting charge, &c., of which more in a moment).

The basis of this explosion is everywhere nowadays cotton, though the proportion of cotton differs with the different services. It is highest in the French and American, and lowest, I believe, in the Austrian.

The missiles thus discharged by the use of propellant explosives are nowadays, save in the case of certain very large pieces, still bound up in one piece with the propellant charge, just as the shot in a gun is bound up in one cartridge with the powder and the cap, and this form of constructing ammunition is known as *fixed ammunition*. Among the other points, which render copper so essential to modern warfare, is one connected with this matter of fixed ammunition. It is important that the lower part of the cartridge which holds the propellant explosive and grips the base of the missile should be seamless. Brass can be pressed from one whole piece into the required shape so that the

of the cartridge is all of one substance with the sides, but apparently no substitute for brass, with its due proportion of copper, can give quite the same results in this respect.

Missiles thus discharged are of two kinds—those discharged from small arms, called *small arm ammunition*, or generally *bullets*, and those discharged by artillery, generally called *shell*. Both the bullet and the shell, both the ammunition discharged from the rifle and that discharged from the gun, are in longitudinal section parallelograms, terminating in ogives. In cubical shape, cylindro-conical. In more simple language each is a round barrel, tapered off to a point in front, but with a circular base. With this shape, though it is quite modern in conception, everyone is now very familiar. It has been adopted for two reasons. It is the shape that flies most steadily and gives the best results in activity; it is also that which, on the whole, offers the least resistance to the air, and would therefore travel furthest with the same propellant charge.

As between the bullet and the shell, between the small arm ammunition and the ammunition for artillery, there are three radical differences of dimension, construction, and object in use.

The modern bullet averages round about a third of an inch in diameter, the size varying slightly with the different services, but the shell begins round about three inches in diameter, and increases indefinitely with the calibre of the gun discharging it, the largest shells at the present moment being over 16 inches in diameter. It is obvious that the size of the shell varies not with the diameter but with the cube of the diameter. The two characteristics which differentiate the two kinds of missiles are first and most obviously their size—small arm ammunition is handled; a quantity of it goes into a light packet; it is insignificant in weight compared with man's strength. Artillery ammunition must be lifted, and after quite the first and smallest specimens cannot be lifted by man without the aid of mechanical contrivances. But much more important a distinction nowadays is the nature of the blow struck. Small arm ammunition has for its object the disablement of an enemy with one wound. It is but rarely that a bullet will strike more than one man, and it is obvious that, in comparison with the total number of bullets discharged, only a small number of men will be hit. The shell, save in certain exceptional cases, is designed to explode at that point in its career where it will do most damage to the enemy, and the fragments of the exploded shell and the bullets which it in particular cases contains disperse and may strike a number of men or inflict many wounds upon one man. Artillery ammunition is essentially an ammunition which is not intended to strike with solid effect, but to act by explosion upon reaching its most useful point, either upon impact or in the air just over the object to be attained. Shell, therefore, is provided with a *bursting charge*, and the bursting charge is of different composition from the propellant charge which drives the missile out of the weapon. This bursting charge is not based upon cotton, and can be composed of such different materials that almost any nation can decide upon one type the materials for which will be found within its boundaries in spite of any possible blockade. Thus, most of the bursting charges in the German service are based upon the by-products of the distillation of coal, of which, of course, Germany possesses an inexhaustible quantity.

Roughly speaking, the reason that the bursting charge and the propellant charge are made of different materials is this: In a bursting charge what you want is immediate action of the most violent kind, or, as it is technically called, *rapid combustion*, but in the propellant charge you want gradual action. You want the pressure upon the projectile within the bore of the piece to be exercised with a sort of increasing push; only thus can you get the maximum efficiency of a gun with the minimum of material. Of course, the combustion is really inconceivably rapid in both cases, but if we could put time under a microscope, as we can put dimensions in space under a microscope, and turn the seconds into hours we should see a bursting charge acting all at once as an explosion of gunpowder does in the actual time of our experience, while we should see the propellant charge in the shape of a much slower and cumulatively increasing expansion of gas from the dissolution of the solid chemical compound forming the original explosive.

The bursting charge in a shell is brought into action by a device known as a *fuse*. This fuse is fixed upon the point of the shell, the conical shape of which has just been described, because that is the part of the shell most likely first to strike an object at which the shell is aimed, and, therefore, a fuse there situated can be used for exploding the shell on impact as well as for exploding it in the air.

The fuse that explodes the shell on impact acts in a fashion which everyone understands and which need not be explained. The same fuse acting in a different fashion, which explodes the shell while it is still in the air, has been brought to extraordinary perfection in our time, and the nicety with which the exact moment of explosion can be calculated has made a totally different thing of modern field artillery from what the same arm was within living memory.

This action of the fuse which explodes the shell while it is still in the air is known as *time-fusing*, and the fuse when it so acts is a *time-fuse*. The principle of its action is the same as that which worked in the extremely crude fuse of an older period. It is essentially a train of combustible material, which is set alight at the discharge of the missile from the piece, which is timed to burn for a certain period, at the end of which it will explode the bursting charge, and the fuse is "set" to such and such a number of seconds and fractions of seconds as will cause the explosion to take place just over the point where the effect of that explosion will be most damaging.

When a shell thus explodes at a particular time chosen in its flight it creates what is technically known as "a cone of dispersion." If the projectile were to be stationary at the moment it exploded its fragments would disperse through a sphere on all sides; as it is in rapid movement, they disperse as a fact through a cone, the apex of which is at the point of the explosion. In timing a fuse the object is to get the shell to explode just where this "cone of dispersion" will do most execution against the enemy.

For instance, if you are shooting against a swarm of men charging against you across the open, you try to set your time-fuse so that the shell shall explode rather above the heads of the men and a little in front of the advancing mass. In this way the cone of dispersion, coming down upon them, will cover the greatest area of the target at which it is aimed. If, on the other hand, you are trying to search a trench (a thing which the shell does most imperfectly, unless it is of high angle fire) you time it so that it shall burst just above the trench and a little in front of it, but so nearly upon it that the cone of dispersion will take effect entirely within the trench.

Shells are fitted with fuses which will always explode on impact, and may, if it is so desired, explode to time instead—that is, in the air before impact takes place. But, generally speaking, shells are of two kinds: those which are intended to explode on impact and the work of which is done upon their striking the target, and those which are normally intended to be exploded with a time-fuse. Of the former sort are high explosive shells, the object of which is to destroy earthwork, and to stun, bewilder, kill, and wound men sheltering behind earth and in trenches. Of the latter sort are the shells of field-guns, which, with the exception of a small proportion to be used for the destruction of the target aimed at, are *shrapnel*—that is, shells which not only burst into a number of fragments but also discharge on bursting a great number of missiles in the shape of rounded or slightly flattened bullets which they contain.

MR. HILAIRE BELLOC'S WAR LECTURES.

Derby.....Assembly Rooms..Thursday.....13 May, 3.
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Harrogate.....Kursall..... Saturday..... 15 May, 3.
Dover.....Town Hall.....Wednesday..... 19 May, 3.
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THE WAR BY WATER.

THE "LUSITANIA" AND THE SUBMARINE WAR.

By A. H. POLLEN.

NOTE.—This article has been submitted to the Press Bureau, which does not object to the publication as censored, and takes no responsibility for the correctness of the statements.

THE sinking of the *Lusitania* is an event which strikes the imagination with extraordinary force. No disaster in the long history of men's conquest of the sea, save the loss of the *Titanic*, compares with it. But the *Titanic* kept afloat for several hours, and the *Lusitania* sank, it seems, twenty minutes after she was struck. It is the awful suddenness of the thing that horrifies. It was this that cost so dearly in lives. There were boats enough for all, but no time to lower them. It is a singular comment that the number of the boats was dictated by the lesson of the *Titanic* loss and was prescribed by the International Commission—called at the Kaiser's initiative! That over one thousand civilians, some two hundred of them neutral, should have been murdered in cold blood has excited an emotion simultaneously expressed in widely separated countries in almost identical terms. I do not propose to discuss the moral aspect of this singular crime. No one needs conversion to right views on the subject, except those to whom moral appeals have no meaning. I propose, therefore, to deal with it solely as an incident in the new kind of war which Germany has declared upon our seaborne trade.

It is perhaps as well to remind ourselves how it was that hostilities took this form. On December 10 last came the news that the whole of Von Spee's squadron, except the *Dresden*, had been sunk at the Falkland Islands. The blow was a heavy one to Germany, and it became immediately necessary to restore her prestige. Within a week a powerful squadron had been sent across the North Sea, had bombarded Scarborough, Whitby, and the Hartlepoons, and had escaped home again unengaged by any British ship. The event was hailed in the German Press as a great victory, and a proof that Great Britain did not command the North Sea. Great Britain, though indignant, showed no signs of fear or panic. The rest of the world, particularly America, spoke of the bombardment of unfortified places as a lapse into barbarism, and jeered at the runaways. As an assertion of Germany's sea prestige the raid was not a success. A new situation seems then to have arisen. To strike those who could not strike back, to run away as soon as the chance of a fight showed, and then to proclaim this as a victory had made the German Navy ridiculous in the eyes of the world. What was there to do? It was suicide to seek a fleet action. To sit down under the domination of the English Fleet was equally impossible. In a spasm of anger Von Tirpitz taunted the Americans with stopping their trade with Germany at England's dictation, and asked them how they would like to see all trade with Britain stopped by submarines? There would at least be nothing ridiculous about that. This was within a week of the Hartlepool raid. The threat was received by the American Press with the comment we should expect from those whose business it

is to give educated expression to the judgment of a civilised people. The answer seems to have been exasperating to those to whom it was addressed. But, if I remember right, no more was heard of the threat until after the affair of the Dogger Bank, when the German Fleet suffered that final eclipse of reputation that must follow flight—and unsuccessful flight—in action. Had raiding been given another chance? Was it the loss of the *Blücher* that determined the German Emperor to turn the submarine threat into an actuality? The terms in which the new blockade was declared, no less than President Wilson's reply, will be fresh in the reader's mind. Both have been extensively quoted during the last few days. The point to remember is that the threat arose out of the defeat at the Falkland Islands and the failure of the cross-ravaging raids. It was resolved upon after the great discredit of the Dogger Bank. Its execution was only delayed until Germany could construct a justification. A Government monopoly of corn and flour was forthwith put into effect, and it was proclaimed that as the German people were on the point of famine no mercy could be shown to the Power that was starving them.

The blockade itself came into effect on February 18 and has now been in force for the best part of three months. As a means of reducing our food supply or of diminishing our willingness to continue the war it has been a complete failure. Hardly one in every 400 of our ships has been sunk, and until Friday last no big ship had been sunk at all.

Is there anything in the sinking of the *Lusitania* to make us fear that the submarine is a more effective weapon than we all thought? More effective than its past failure would indicate? Is any greater success in the attack on our trade to be expected?

The time has been ample to prove that, so far, the judgment of every competent critic, expressed before the campaign began, was correct. Between August and February the only successes of any note which the enemy's submarines had scored against our fighting fleet were the sinking of the three cruisers on September 22, of *Hawke* on October 15, and of *Formidable* on the night of New Year's Day. No other warship had been touched. It is generally agreed that rational precautions would have saved these five ships also. On each of the three occasions the victims had been going at slow speed, or were stationary; on two they were said to have been cruising in neighbourhoods they had been frequenting for some days; in none was there any destroyer protection.

During the whole of this period a very crowded traffic had plied daily between the Southern ports of England and the Northern ports of France. Some hundreds of thousands of men had been sent across to fight, and a constant stream of supply ships, hospital ships, and transports had been in regular passage, from one end

of the Channel to the other. Not a single attack was successfully directed against any one of them. And against all—except hospital ships—submarine attacks, even without warning, would have been within the accepted rules of war, and justified by a direct military purpose. The absence of attack on the transports and warships when properly protected; the failure of the attack (in the Heligoland affair) on the fast battle-cruiser *Queen Mary*, confirmed the conclusions put forward before the war. The submarine is a slow-moving sort of assassin, and can do his work only if he can stalk a slow prey or waylay a fast one. He is defenceless against attack, and finds safety only in evasion. The situation could be summarised thus: Submarines could not frequent waters patrolled by destroyers, that they could not show themselves in the neighbourhood of ships, if destroyers were in their company; lastly, that in daylight a big ship at high speed might be safe from even a close-range attack if she were efficiently coned and skilfully handled.

It would seem, then, that no fast liner, either going at its top speed or avoiding an habitual or expected route, or with a destroyer or two in company, should be in any danger whatever. It is the fact that these precautionary measures were at once so obvious and so well known that makes the omission to adopt any one of them so startling in the case of the *Lusitania*. Although capable of twenty-five knots, she was going barely two-thirds of this speed when torpedoed off the Old Head of Kinsale. She was apparently passing within a mile or two of the route which, time out of mind, every home-bound Atlantic liner has followed. Although submarines were known to be acting off the South Irish coast, no destroyer preceded or accompanied the doomed liner.

The recent sinkings of the *Earl of Lathom*, of the *Candidate*, and of the *Centurion*, and the attempt to sink two others in these waters might have been notice enough that the *Lusitania* was in a danger zone. But to make sure, the German Ambassador in America had given every possible publicity to the intention to sink her, if it could be done. The warning was repeated to individual passengers by telegrams addressed to them personally. Note that the urgency of this effort to deter Americans from travelling in her afforded no reason for supposing that, if a submarine got within striking range, the *Lusitania* would be stopped and told to disembark her passengers. Two inferences only were possible. The thing was a bluff or murder on an untold scale was in prospect.

Neither Mr. Churchill's answers in the House of Commons on Monday, nor Captain Turner's evidence at the Irish inquest explained why none of the three precautionary measures I have mentioned were taken either to save the ship or to prevent a hideous loss of life. We are told that a destroyer escort is only given to merchant ships that are "vitally needed" by the Government. The *Lusitania* was the only one of the world's great liners in commission. She exceeded in displacement by over 12,000 tons any other passenger ship in use. Her continuance in the Atlantic service was perhaps the most striking of all visible evidences of our command of the sea. Was there no "vital need" to safeguard so tremendous an embodiment of our naval prestige?

But more than our naval prestige was at stake. The warnings that murder was intended had been openly and ubiquitously given. The American

passengers who laughed at the threat did so because they had absolute confidence in the protection that the British Navy could give them. To accept them as passengers was an implied undertaking that this confidence was not misplaced. If we could not spare them destroyers, could we not at least have seen that, once off the coast of Ireland, the ship had an escort of patrol vessels? Such vessels had, in fact, accompanied the *Gulflight*, and though they were not able to save her from being torpedoed, it was one of these vessels that took every soul off her alive before she sank. Might not an escort have saved a thousand lives on Friday last?

Captain Turner admits that he was warned of the presence of submarines, though not that he was told of the sinking of the three steamers I have named. And in following his old route and in dropping his speed to seventeen and eighteen knots, he says he was acting, so far as he was able to, under "instructions." Did the Admiralty instruct him to follow the usual homeward course, on the supposition that the pirates, after all the warnings they had given, would certainly be looking for him elsewhere? Was he told to go slow because it would be a greater risk to wait for a pilot in the Mersey than to be at the mercy of any waylaying submarine in the danger zone? Would not both forms of danger have been averted had the ship made a detour at twenty-five knots, and so arrived at the prescribed hour, after a longer journey through safer waters, at a speed which has been proved to be protective?

It is clear that we do not yet know the full story, and what we do know is not very satisfactory. No new fact is disclosed that should alter our judgment on the submarine. We only know that precautions hitherto proved effective were not taken. We do not know why not. The Admiralty has done so well for the merchant service that the present disaster is doubly conspicuous. And it is the more regrettable from the fact that, while the criminality of Germany cannot be disputed, our competence to combat it can be.

THE DARDANELLES.

Since I wrote last week, no official news of the progress in the Dardanelles has thrown any fresh light on the Naval share in those operations, but of unofficial news we have a good deal of an extraordinarily important and interesting character. Mr. Ashmead-Bartlett, who viewed the operations at Gapa Tepe from H.M.S. *London*, has cabled the most brilliant description of the landing of the Australians and New Zealanders on the 25th and 26th. The story is necessarily far from complete, and deals only with what a single observer on board one ship could see. On Tuesday was published an almost equally interesting account of the landing at the Five Beaches at the point of the Peninsula. The two reports amply justify the forecast made last week that this landing would turn out to be the greatest operation of combined military and naval forces ever recorded.

Every step in the difficult and complicated job of disembarking troops into boats, of towing them to the shore, and all of this by night, had, it seems, been rehearsed day after day until everyone was step-perfect, but heartily sick of the drill. The rapidity with which the operation was actually performed on the 25th is the best justification of these arduous rehearsals. It is characteristic of the Navy to leave nothing to

chance in an affair of this kind, and, indeed, so great are the difficulties that to have attempted the thing without every detail having been learned would have been a mere courting of disaster. The speed at which all these vital manœuvres were worked out and mastered is little short of extraordinary. Early in April Sir Ian Hamilton was reviewing the French troops in Egypt. By the 21st every transport at Murdos Bay and every officer and man on board was apparently ready for action. There must have been a very strenuous fortnight's work, though no doubt many of the more ingenious arrangements—such, for instance, as the conversion of the River Clyde into the modern equivalent of the Horse of Troy—must have been put in hand a long time before.

Our most pressing curiosity at the moment, however, is not to do with the past, but with the present position and the future prospect. We know more of the present position since Mr. Asquith's statement in the House of Commons on Thursday last. Of the future we can say this with confidence, that the success of the entire operation will depend upon the extent to which the artillery of the Fleet is able to co-operate with the infantry and artillery upon shore. Last week I dwelt upon some of the limits of this co-operation—such as the inability of ships' guns to give the infantry the advantage of the *searching* effect that can only be got by high-angle fire, the virtual impossibility of combining the fire of more than one ship on a single target; the necessity of each ship being served by a separate observer in every long-range bombardment of a fort; and, finally, the difficulties of keeping up quick and accurate communication between each observation station and the ship it serves. But there is one limitation to which I did not draw attention at all, and it is perhaps the most obvious of any of them—I mean the fact that thick weather may, at any moment, deprive the Army of the Fleet's assistance, and that it may remain so deprived for a considerable period. One gathers, for instance, from one of Mr. Ashmead-Bartlett's letters that, from the 12th to the 20th of April, perfect weather conditions, both for landing and for long-range artillery, prevailed; but that from the 20th to the afternoon of the 23rd the conditions were altogether unfavourable. A Murdos telegram of Friday last tells us that there was a gale blowing on the 5th, 6th, and 7th. It seems that these gales generally bring with them low-hanging clouds and a grey mist, which make long-range fire impossible, because the gunners cannot pick up the target through their sights. There were many interruptions to the bombardment in February and March owing to this cause. The weather was not so bad that the ships could not co-operate on the 6th, and there is no intimation that there was any thick weather

between April 25 and May 5, so that there should have been ten clear days in which to make the most of the offensive of the combined Services. It seems clear that the naval gunfire, both direct and indirect, was of vital moment in the momentous actions of the 26th, 27th, and 28th. The capacity of the Army to stand safely on the defensive, if weather should throw the naval guns out of action, would naturally depend upon two factors—first, how far the offensive had been carried while the help of the naval guns was available, and, next, upon the number and weight of the artillery which it has been possible to land, emplace, and to supply with ammunition. It was no doubt realised from the first that the greatest weakness of the position lay in the possibility of a sudden divorce between the two Services. But it should be remembered that, with the advance of the summer, the spells of bad weather should be at once less frequent and shorter when they come.

AN AFFAIR OFF THE BELGIAN COAST.

The Secretary of the Admiralty made an announcement on Saturday last to the effect that the T.B.D. *Maori* had struck a mine off the Belgian coast, that the crew had taken to the boats, and that the T.B.D. *Crusader's* boats had been lowered to assist. The enemy then opened fire, and *Crusader*, after being under fire for an hour and a half, had to retire, leaving her own and *Maori's* boats behind her. Seven officers and eighty-eight men were in them and were taken prisoners. It is not stated that either the *Crusader* or the boats suffered any casualties, and to most people the story has appeared exceedingly puzzling. Was the mine struck before daylight? Why was *Crusader* unable to pick up any of the boats? It is possible that *Crusader* drew the fire of the forts, in the hope that the boats would be able to pull out of danger, and manœuvred quickly to avoid being hit herself? Perhaps after an hour and a half of this it was found impracticable for the boats to make way enough to have any hopes of getting to safety. To take in the crews, *Crusader* must have stopped and become too easy a mark. To stay any longer was to take a useless risk, possibly involving the risk of losses amongst the boats as well. What the destroyers were doing within range of the forts is not explained. The German vessels that took our men apparently came out and returned without being engaged. What kind of vessels were they? Perhaps the most incredible part of the story is that our boats were taken and not sunk. The loss of a destroyer and so many officers and men is a serious matter, and it is to be hoped that the Admiralty will give us further particulars.

THE STRONG LINE FOR AMERICA.

By CAPTAIN CLARENCE WIENER.

ICaptain Wiener is the well-known American military expert and writer. He held a commission in the British Army during the South African war, when he was twice mentioned in dispatches. His views as an American citizen have special interest at the present moment.

IT would be well if Americans ceased to gaze on the surface of things only—it would be well if they looked closely into the nature of the great cataclysm that is taking place not only on the plains of Europe, but in many other quarters of the inhabited globe. For the moment the United States might be styled the playground of the world, for there no sounds of guns fired in anger are heard, no cries of outraged womanhood, none of the miseries

of absolute devastation. Yet this liberty from the horrors of conflict may well be but a momentary respite. Should the Teutonic races win through on their policy of "blood and iron," America will have but a few brief years of culpable peace; in the end Prussian military domination will hold her in its grasp as the ice holds the polar seas.

It would be well, while there is yet time, to take these things to heart. And to act. For never again—if true civilisation and enlightened progress is throttled now—will we, the citizens of the United States, have such great forces acting in unity with ourselves. That may appear a selfish view-point

to take. But policy is destiny in this, as in all else. Still, let us look at the other side of the picture. If we Americans now stand aside and allow other Powers to fight our battles, as well as their own, what will be the result? Will these nations, as victors, look up to Americans? Will they even regard them as friendly equals? Why should they? They will have suffered much hardship, much travail; the agony and horror they have passed through will take many years to heal. If America selfishly and superficially stands aside, it is true she may not suffer loss in the field; but will she not be made to feel in time to come how cowardly and how unfriendly her action has been?

The world is out of joint. It is no time to fall back upon "quack cures," if true understanding is to be preserved among peoples; and if the Germanic race is to be saved from itself, there is now but one cure, and one alone—it is by application of the surgeon's knife.

We of the United States are far too apt to boast of manly qualities, the freedom of our institutions, the liberty of our personalities, and let it end thus in windy and futile pratings. Such exhibitions will cause us little benefit in time to come, unless backed by resolute and virile action. We must not let pass this golden opportunity of aiding in the righting of the world's affairs, of doing our share in cutting out the canker of a malignant growth in the side of universal friendship and true brotherhood.

We are fond of talking of effete Europe, but where would the United States be if England, France, and Russia—not forgetting valiant little Belgium—had sunk into a state of atrophy? For is there really a sane statesman, even a sane citizen, among us who could truthfully state that in his opinion the Teutonic races would have waited to cross the Atlantic in order to occupy Canada and Brazil? Waited for what, forsooth? The pleasure of the United States! No; we would have been trampled under the iron heel of Potsdam just as ruthlessly as was Belgium and Poland. Are we Americans such fools that we won't admit these things even to ourselves?

Why, then, do we try to screen ourselves behind a wall of evasion? If we were such dullards a few brief months ago as to believe the Germanic races loved us better than other nations, surely the scales have by now fallen from our eyes! We need only to look at the scurvy and virulent cartoons in their public Press to see how we are regarded now that our neutrality cannot be used as a catspaw in their favour. Nor is even this neutrality respected. The German Ambassador and his entire staff are implicated in the most damnable underhand acts against us; nor does it stop at that. This gentleman and his staff are engaged in trying to bolster up, both officially and privately, a pestiferous propaganda in our country and against friendly Powers in a most mendacious and improper manner. What wonder if we finally insist

upon his immediate recall! Of the extraordinary trio, Bernstorff, Münsterberg, and Dernberg, the latter alone will then remain to sway American public opinion improperly by gaseous lies and subterfuges.

The Government at Berlin not only laughs at the impropriety of the conduct of their representatives in America—it insults and allows to be insulted publicly in Berlin the U.S. Ambassador. All this might be set down to temporary and rabid madness. But there is no excuse for their presumptuous and murderous dictation in regard to the conduct of the war. They are without the pale of civilisation, outlaws of humanity, and must be treated as one treats a mad dog. They must be destroyed. Civilisation and barbarism, Rome and Carthage, cannot both exist.

These perfidious exponents of a brutal doctrine first of all declare a blockade that they can in no way enforce. They then affirm, against all accepted rules of International law, that they will sink all ships whatsoever found within a tremendous sea area, which they are good enough to term a "war zone." The United States protests against this entirely novel and iniquitous treatment. Berlin laughs at us and our "quack" measures; she sinks two of our ships flying the national emblem. What do we do? Talk! We might be even forced to say something quite severe did the occasion arise again! And now she has sunk without warning of any kind a trans-Atlantic liner, involving the murder of many American citizens. Certainly it cannot be said that the "threats" delivered to the passengers in New York were proper "warning." It will not mitigate the sentence civilisation will pass on the wholesale murder of undefended "neutrals." Yet it is proposed that the Executive in Washington should send a query to Berlin asking if this ghoulsh deed was, in fact, intended! No wonder that Europe is taking us for a useless lot of money-grubbers; this is what we are certainly degenerating into. Why not take our stand—a manly and a chivalrous stand? I'm afraid that if we do not there will be but few that will remain proud of being Americans. That is not a pleasant prospect to true patriots.

So if we finally wake up to a proper sense of our honour and declare war on these brutal buccaneers, what will transpire? First and foremost we shall be doing our duty to civilisation. We shall be doing our apportioned share in bringing to a close within the speediest time a conflict of great suffering. We shall at the close of this conflict be on an equal footing with the other friendly nations. Politically, we shall be in a position of tremendous and almost unequalled strength. Is this not worth while? But far and away more important, more advantageous, and greater for us in a myriad ways will be the comradeship and federated understanding between ourselves and the friendly nations—a real contribution towards the peace of the world.

THE BIG AEROPLANE. ITS VALUE FOR THE OFFENSIVE. By L. BLIN DESBLEDS.

BOMB-THROWING from aircraft can be considered an efficient and reliable method of bombardment only when the number of bombs dropped in a given time is large. The importance of the number of bombs in carrying out an aerial attack has on several occasions been shown in this publication. A large number of bombs can at present be carried only by a large number of aeroplanes, at least so far as the French and the British are concerned. As regards the Russians, they have for the last year or so been experimenting with an aeroplane of very large dimensions and having a great lifting capacity. Reports which have recently been published would tend to show that the Sikorsky biplane has now been successfully applied to military uses. If such were really the case the advent of the large military aeroplane would give to the Russians a weapon of considerable offensive value.

THE "LIFTING" AND THE "FLYING" QUALITIES OF AEROPLANES.

There are many reasons why the large aeroplane is a much more powerful weapon than the small one, and in comparing the large and the small machine it is necessary to keep in mind some technical details, such as the "lifting-quality" and the "flying-quality" of aeroplanes.

By "lifting-quality" of an aeroplane is meant the amount of weight it can lift with reference to the power consumed. The greater the weight lifted, for a given amount of power, the greater is the "lifting-quality" of the machine. The term "flying-quality" is used to denote the weight an aeroplane can carry, at a given speed, with reference to the power consumed. The greater the weight that can be carried, at a given speed, for a given amount of power, the greater is the "flying-quality" of a machine.

It is evident that in considering the value of an aeroplane for offensive purposes it is very important that its "lifting-quality" as well as its "flying-quality" should be taken into account. An aeroplane with a great "lifting-quality" can, relatively, carry a large weight for a small amount of power—that is, of fuel—consumed. If, besides, it has a great "flying-quality," the machine will be able to carry that large weight, at a required speed, with a relatively small consumption of petrol.

An investigation of these two qualities of an aeroplane shows that they are always more pronounced in large machines. It follows, therefore, that from an offensive point of view the large aeroplane is much more valuable than the small one, because of its much greater "lifting" and "flying" qualities. This conclusion is now definitely established. Such was not the case, however, a year or so ago, and were

it not for that lack of knowledge it is very likely that we would now be in possession of a large number of offensive aeroplanes of great dimensions, of large carrying capacity, and of good "lifting" and "flying" qualities.

TWO LARGE AEROPLANES.

It was towards the end of 1913 or the beginning of 1914 that the advantages of the large machine over the small one began to be recognised. In France the engineer Colliex was about that time experimenting with the Jeanson-Colliex seaplane—a machine of huge proportions. In Russia, Sykorsky, with the assistance of his Government, was developing the enormous aeroplane which, two or three weeks ago, was used at the front for the first time.

The Jeanson-Colliex hydro-aeroplane has a span of 89 feet and a lifting surface of 1,560 square feet. It is fitted with two Chenu motors of 200 h.p. each and driving a propeller 16ft. in diameter. The total weight it can lift is 10,340lb., the "useful" weight being about 4,400lb. Its speed is about 60 miles per hour. The offensive potentiality of such a machine, especially as regards bomb-carrying capacity, is enormous, and it is a great pity that when the war broke out the Jeanson-Colliex machine was not sufficiently "developed" for immediate military application. It may be added that its trials were carried out with great success.

The Sykorsky biplane is driven by five motors of 100 h.p. each. Its span, from wing-tip to wing-tip, measures 121ft., and its length from nose to tail 66 feet. It has a lifting surface of 1,958 square feet, and has already taken, to a height of nearly 1,000 feet, a load of sixteen passengers.

The employment of the Sykorsky biplane in military operations will, in the hands of our Russian Allies, be a weapon of considerable offensive value, and if the report be true that this biplane has now been successfully adapted for use on the Eastern front we may expect some considerable development in the matter of aerial attacks.

Both the Jeanson-Colliex seaplane and the Sykorsky aeroplane could carry a load of 1,000lb. of bombs over a distance of 250 or 300 miles, and fly back to their starting base.

OFFENSIVE AEROPLANES FOR SIEGE WORK.

The large aeroplane, besides being well suited for carrying out such offensive operations as have been already examined in the columns of this publication, would be especially valuable for siege work.

It has been estimated that, up to the present, some 5,000 shells have been fired by the Germans on the Russian fortified town of Ossowiecz without having reduced it. Now a fleet of 300 large aeroplanes, consisting of 150 machines in actual use, and of the same number in reserve or in the repair shops, could drop daily, or several times daily, 6,000 shells of 25lb. each; that is, 150,000lb. of shell and high explosives.

In view of this enormous potentiality of the Sykorsky biplane, it would seem that our Government, as well as that of the French, would do well to adopt the Russian type of aeroplane (if its success is such as it has been reported) in conjunction with the types already in use.

A NEW MEANS OF DEFENCE AGAINST AIR RAIDS.

In view of the recent airship raids into this country, and of the possibility of more visits from Zeppelins, the writer would like to call the attention of all those connected with aerial defence to a note read by Professor Branly at a meeting of the Académie des Sciences held in Paris on March 29, 1915. In his note Professor Branly, to whom the world owes wireless telegraphy, shows that by means of a small motor, such as that of a motor-bicycle, it is possible to obtain a light of 40,000 candle power. This is a more powerful light than that obtained from any other source. As Professor Branly says in his communication, one can with such luminous sources possess "a mobile defensive belt against night attacks of all kinds." It would seem that the most efficient defence against aircraft operating in darkness is to dazzle them by the employment of an intense light.

HONOURS OF WAR. A STUDY IN GERM-CULTURE.

By JOSEPH THORP.

THE Commandant of Fort A. stood in the laboratory cupola of the poison-control watching through his mica monocle the Ober-Professor Hauptmann von Strafenberg putting the finishing touches to an important experiment in germ kultur. The air was hushed with mystery. The experimenter trembled like a chronic dipsomaniac.

The Commandant nervously raised his rubber-gloved hand as if to brush an upturned moustache, and, encountering the celluloid vizor of his helmet, made a gesture and a guttural exclamation of profound impatience.

History was being made.

The eminent Kriego-biologist was on the eve of the greatest discovery of the Great War—the second or third of the series of Great Wars that was definitely to end War.

From the minced fragments of babies' comforters (which had been collected by volunteer corps of frightful, armed nursemaids throughout the empire, and, of course, ruthlessly commandeered in occupied territory), mixed with the tertiary gases of hyper-oxidised taxi-cab lubricating oil, distilled by the Hauptmann-Professor's own pet processes from the Imperial dustbins of the All-Absorbing's own pet suburb, he had compounded a medium in which the bacillus of cerebro-pneumo-typhus (first bred in the famous State germ-kennels of von Kalbskopf) multiplied at an indecently terrific rate.

The Professor, overwhelmed with emotion, staggered to a chair, tore off his prismatic lenses and amalgamoid insulators, and, waving the sealed test tube in his hand, exclaimed triumphantly, "It is finished! I open. And there is no longer an enemy!"

"Good!" said the Commandant on a note of anxiety, eyeing the wagging tube. "But are you quite sure that there will be any garrison? Not, of course, that it matters," he added in loyal apology.

The Professor dived into the pocket of his aluminiumised overall. "If Excellency will but sniff this powder, he can with impunity face the all-removing test tube."

"Ah! so," replied the other. "But perhaps a mere

formality; of course it would be more in accordance with the regulations if I——" and here he touched the bell.

"Precisely," said the Ober-Professor Hauptmann.

An orderly answered with uncanny promptness.

"The Lieutenant commanding the Fifth Typhoid Battery will attend in five minutes with twelve of his men for testing purposes; also the Engineer-Asphyxiator will present a report on the controls of his new hyperæsthetic plant."

But, in fact, the report arrived before the Engineer-Asphyxiator, for it was just at that moment that an enemy howitzer that had been doing some inconclusive searching suddenly landed a lucky shell in the E.-A.'s department.

The outraged officer a few minutes later rushed in breathless, carrying a smoking germ-mauser in his hand. "I have the honour to report to your Excellency that a shell has exploded in my battery; that the main retort has been shattered, and the new .000042 c.m. germ-brood has escaped; and that my dogs of men have broken and disgraced my regiment."

"A shell!" cried the Commandant. "Barbarians! Swine-dogs! They do not fight; they batter. And your men?" said the Commandant, fiercely.

"They will break no more!" said the Lieutenant grimly. "Have I your Excellency's permission to join them?" he added, holding the barrel of his mauser under his nose and preparing to inhale.

"It will be more in accordance with the Imperial regulations if this ceremony is performed in your own quarters."

The Lieutenant saluted, clicked, and was going when the Ober-Professor detained him.

"It will be still more in accordance with the ultimate fitness of things if the Herr Lieutenant will postpone this ceremony. He will live to see the triumph and honour of our arms. I open this—pouf! and the enemy is no more. So." And Ober-Professor Hauptmann von Strafenberg hugged himself in a bland ecstasy.

It was at this moment that the Engineer-Asphyxiator presented himself. "I have to report, sir, that the main barrel of the C.-P.-T. has been split and damaged beyond

repair. I have no material (the last supply of tri-pulped gramophone records has been exhausted), and, as the Professor is doubtless aware, the effect of the leak is that I have no men, or at least none worth seriously considering."

The Professor blanched; the Commandant reflected.

"This is more than unfortunate, gentlemen. The gallant defence can no longer be continued. The Herr Hauptmann Professor carries in his hands the salvation of our country. It is necessary that he leave the fort. It is convenient that we go with him. We have made an ineffably brave defence. The twisted and so beautifully coloured corpses of our rash enemy testify to it." He pointed to some terrible things out on the glacis. "The savour of our deeds shall smell to heaven for all time. Meanwhile we can count upon the uncultured chivalry of a profoundly stupid enemy. We will demand the honours of war, the right to leave with our weapons, and our little personal possessions—such, for instance, as this test-tube, eh, Professor? You, Herr Lieutenant, will now carry out a flag of truce. You will take also these tetanoid capsules. Scattered with discretion, they will no doubt cause trouble later.

"Engineer, you will, also with discretion, connect an emergency tube from the main typhoid battery with the prisoners' quarters.

"Herr Professor, I can leave the wells in your excellent hands. . . ."

It was a little later in the day that a Major of Artillery of a stupid and guileless race returned to the fort with the Lieutenant to discuss the terms of capitulation. They boiled down into the granting of a safe conduct to the Commandant, the Herr Ober-Professor Hauptmann, the Engineer-Asphyxiator, and the Lieutenant of the Typhoid Battery.

The Major's signature was fixed to the authentic parchment. A sudden faintness overcame him. The Professor examined him with professional detachment. "It is unfortunate," said he, "that he will not live."

"A tetanoid capsule, if I mistake not," said the Commandant, sniffing cautiously.

"Precisely," said the Professor.

"They will always be fools."

"And we shall never be gentlemen," said the Lieutenant, not without emotion, as he gave the last salute to the incomparably stupid Major.

"As this amusing gentleman has so inconsiderately removed himself," said the Commandant, emitting a cultured laugh, "it will hardly be necessary to await the entry of the enemy. We will leave by aeroplane at once."

BERNHARDI'S VOLTE FACE.

By ADMIRAL SIR CYPRIAN BRIDGE.

ASUFFICIENT commentary on this rather whining apology of General v. Bernhardt would be a comparison of the date of publication of his "Germany and the Next War" and the date of his prefatory letter, of which a facsimile is prefixed to the present apologetic volume.

Bernhardt's "Germany and the Next War" was published, I believe, in 1911. I do not know the date of the first publication of the English translation, but everyone is aware that the book was reviewed in many English newspapers and periodicals long before the present war began. The opinion then formed of the meaning of the work was virtually unanimous here and identical with the opinion of it still prevailing.

No knowledge of any attempt on General v. Bernhardt's part to explain away or apologise for the sentiments expressed in the book ever reached the reading public in this country or—apparently—in the United States. It was, and still is, impossible to escape the conviction that, at any rate until after the Battle of the Marne, General v. Bernhardt saw no reason why anything that he had written three years earlier called for recantation or apology. The change which the result of that battle imposed upon German hopes is reflected as in a mirror in General v. Bernhardt's new statements. The letter in which he asked the Emperor William's permission to publish his present recantation is dated November 20, 1914, by which time even the most stupid and sanguine German must have been convinced that the result of the Battle of the Marne was not likely to be reversed in a hurry. It is, therefore, quite easy to understand why General v. Bernhardt found it advisable to try to explain away towards the end of 1914 sentiments and statements which he had promulgated in 1911, and to which, in spite of unfavourable criticism, he had sturdily adhered throughout almost the whole of the intervening time. The Battle of the Marne, following on the heroic and never-to-be-forgotten resistance of the Belgians, capsized the whole German strategic plan, and General v. Bernhardt's earlier notions went overboard with the rest of the Pots-dam prognostications.

How much of his new statements comes from General v. Bernhardt himself? It certainly looks as if the "one or two articles," which he asked the Emperor's permission to write—a permission on which he counted with confidence—it certainly looks as if these "one or two articles," now published in an English translation, had been submitted to illustrious inspection and been improved by the interpolation of statements emanating from or inspired by the highest authorities.

The reproaches cast at England are in the true Wilhelmstrasse-Potsdam style. The intolerable tyranny which Bernhardt or his inspirer imputes to British policy—especially in South Africa and in India—has been rewarded, not as those personages expected, by disaffection and revolt, but by spontaneous offers of Princes, Feudatory Chiefs, and people in India of their property and even their lives for the support of that policy; whilst in South Africa hostilities against the most important oversea German possession are being con-

ducted by South Africans on their own part, the General in Command and most of them being Boers.

I do not know whether it is General v. Bernhardt himself or someone else more continuously in touch with the highest German authorities who coined the word "Navalism." It is, of course, a mere *tu quoque* to be hurled at anyone who speaks of Prussian Militarism. The coinage is regarded, in Germanophile circles, as a brilliant specimen of Pots-dam wit. The word was exported to the United States and distributed widely to be used by interrupters at public meetings at which German diplomatic and belligerent methods were discussed.

Of course there is no parallelism between Prussian Militarism and so-called British "Navalism." Everybody understands the first and knows what it is, and it would not be General v. Bernhardt's fault if it was not understood and known. His former book makes that quite clear. British "Navalism," according to the new German view, is that, because the widely-scattered British Empire—with its component parts separated by great tracts of sea—possesses a great Navy—not so powerful relatively as the German Army is on land—our naval power must be used for the oppression or restriction of other countries. Not one word in proof of this is attempted. If any were possible we may be sure that it would be thrust before our eyes. The truth is the exact opposite of what General v. Bernhardt and his inspirers assert or intimate. Here is one sufficient demonstration of it. No economic or industrial factor in Germany has been more highly developed since the establishment of the Empire than the German mercantile marine and German commercial interests overseas. It would be possible to show "graphically" that increase of the British Navy has been accompanied by an increase of German mercantile tonnage and in the value of German overseas trade. In many parts of the world, down to the very outbreak of the war, British naval power protected German interests. Accusations against British "Navalism" therefore are but empty and insincere vituperation.

It is hardly possible that General v. Bernhardt can be ignorant of the fact that the so-called "convention" between Great Britain and Belgium for the defence of the latter little country if its neutrality was violated was communicated by King Albert to the German officials and consequently was not kept secret. Also it is not "hardly possible," but quite impossible, that the so-called "convention" was ever entered into. The word "convention" is a forgery of the German Government in a MS. document which contained no such word, but did contain the word "conversation," for which "convention" was fraudulently substituted. A facsimile of the document was published some months ago by the *Field* newspaper, in which German handwriting and the forgery are at once perceptible. Why does not General v. Bernhardt tell his readers of this?

"The New Bernhardt; His Latest Views on War." (London: Price 1s. net.)

TALES OF THE UNTAMED.

IV.—FUSELINE.

Adapted from the French of Louis Pergaud by Douglas English.

DEEP gloom and a slow-dripping thaw. But for the drip, deep silence.

A click, a swish of steel. A scream which scythed across the gloom; which mowed long swath of silence down; which burst torrential on the void across the shattered flood-gates of the night.

The Marten Cat was caught.

The dainty, nimble Marten Cat; the brown-furred, white-frilled Marten Cat; the come-by-chance of last year's fickle pairing.

This night, as most nights, she had roamed afield; had left the moss-clad alder-stump in which she wintered solitary.

The cold had come betimes. The migrants had long since winged south, in serried, wedged battalions.

The food had dwindled, vanished. Fuseline, hunger-maddened, prowled nightly round the village.

More prudent than her kin, maybe, maybe less bold, she shunned the straw-roofed wheat-stacks, the holes and corners of the lofts, the cob-webbed, angled rafters.

Each morning found her snuggled in her nest, far from the village, far from Man.

Six moons had passed, since, with a moon abetting, she dragged her last hen-blackbird from its brood. Few birds remained with the forest border; and these were seasoned veterans, who clung, despite the snow, to their old haunts; whose cunning, equal to her own, was proof against surprise.

A week of fruitless stalking, of biting, gnawing hunger-pangs, steeled her to her first raid on human dwelling.

Through broken tile, stuffed clumsily with straw, through chink, where dry worm-rotted beam shrunk from its mortared setting, she crept into the cowshed loft, thence down the hay-shoot to the ground, thence by a cat-hole to the whitewashed hen-house.

Lightly she vaulted to the roost on which six melancholy birds drowsed with their legs crooked under them.

She slew them, every one.

A single cunning bite sufficed, a bite which loosed a jerk of blood. Her clawed feet pinned her victim down. She pursed her lips and sucked its neck. She dropped its limp, like corpse when it was drained. Blood was good meat, good drink. Why trouble to tear bones apart, to mumble throbbing flesh?

Drunk with her meal, her white frill crimson-dotted, with matted fur, with belly like a drum, she homed unconscious of her tell-tale spoor.

Long hours she slept, and, in those hours, Fate spun her silent web.

Each night she grew more daring. She braved the shuttered houses of the village, within whose courts growled watch-dogs tushed like boars. She braved the full moon's radiance, when Man lurked in his ambush armed, and spurt of flame, and thunder-peal, brought to one luckless prowler death, to all that prowled a warning.

Often the night's excursion failed, consumed itself in wander-hours, aimless, monotonous wander-hours, past garden-walls, through hedgerow gaps, up sloping thatch and tiling.

But one, a gloomy, moonless night, brought welcome change of fortune. A sentinel star gleamed through a break of cloud, like candle twinkling from a cottage casement, and, in the dim half light of it, came Fuseline to the drain-hole in the wall.

She passed down a clear avenue. The road was fenced about with littered bavins; dried pea-sticks of the year, whose darkened lines converged across the snow to the drain outlet. Within this lay an egg, a cracked egg, oozing yellow yoke. She leapt at it, and gulped it, and licked her stickied lips.

A great find that. Could there be more? All night she nosed about the wall.

Next night the same path beckoned. She found another egg within the drain. Next night, another.

* * * * *

The winter's day closed sullenly, under a leaden sky. The hummocked snow clung weakly to the boughs. At times, slow-melting, water-laden masses splashed to the earth and ebbed away in muddied rills and trickles. Fate brooded on the

forest, mothering the slow birth of the thaw beneath the uneasy rustling of her wings.

Rose to the window-opening of the alder, as though a splash of snow had caught its ledge, a white-frilled, eager-questioning, small face.

On easy, sinuous, gliding feet slid Fuseline to earth. She must be quick. The day had dragged, and two days' hunger gripped her. She ran her course apace. Her stout-clawed, sinewy, splayed feet danced feather-light across the melting drifts; her plumed tail balanced after her; down silent sludge-scored runs she crept, past rough-set walls of weathered stone, past hedgerows blanketed with white, whose endless measured dripping marked the hours.

Hope fired her blood, Hope winged her feet, towards the expected meal.

Straight to the bavin road she came, and found it fenced with flanking baulks of timber.

Had these been there before?

The melting of the snow had blurred her landmarks. The egg was there; she smelt it, caught its whiteness—this time a little deeper in the drain.

And one road only led to it—between smooth walls of wood.

Had these been there before?

A snow-splash fell, and, under it, the end of one wall vanished.

The snow, then, might have hidden them.

With groping feet, with snuffing nose, she picked her dainty, cautious way, and, as she neared the egg, smelt Man. She paused, she listened, pricked her ears, half dubious, half afraid.

The scent hung close to ground; it needed but a lift of neck to clear it.

The scent was stale—and she was very hungry.

Six inches more!

The little paw stole venturing out, one inch, two inches, three—

And jaws of steel, fanged, murderous, whipped from their muddled ambushade, and snapped across the wrist.

The Marten Cat was caught.

Her scream died in a wailing bleat whose echoing shuddered down the aisles of darkness.

Twigs snapped, leaves danced, quick stamps and thuds proclaimed the panic flight of thieves four-footed.

The wrist, the hand was shattered—bone, tendon, ligament crushed to pulp. Yet her first impulse was to rescue it. Vainly she writhed, and tugged, and plunged, and bit the pitiless steel.

Her twists, her strugglings spent themselves—ended in piteous moanings.

Yet she fought on—five hours she fought.

From eastward crept a dim half light, a yellowing of the cloud bank.

A shot rang out. That meant a Man abroad. And she was in His power, and He was coming.

She flung her head back, drummed the ground, arched, tautened like a bow.

A cock crew close at hand.

Backwards she tugged, to right, to left. Forwards she plunged, until the chain, with savage jerk, restrained her. The teeth bit deeper in her flesh. She licked the welling crimson.

Her head drooped limp; she seemed to sleep.

But second cock-crow roused her, and clank of chain from ox's stall.

The eastern ridge was yellowing. The dawn was close at hand. And Man would come with dawn.

It was her life against her limb. Her limb must go. Writhing, contorted, lashing like a snake, she flung her hind feet off the ground, and twirled and spun her body's weight against her arm's cohesion.

The imprisoned wrist was twisted like a rope.

The wrist-bones cracked and splintered. The arm-bones, snapping like dried twigs, thrust their jagged ends through

flesh and skin. Courage! The cord was fraying, stretching, parting. Her eyes swam in a mist of blood; froth slavered from her lips; her fur was matted, sweat-drenched. Again the ghastly spinning of herself. The twisted tendons roped as one, and once more the cock crew. Her teeth? Her teeth were her last hope. Fiercely, magnificently, she turned them on herself, sawed her own living flesh with them, mumbled and gnawed till the trapped wrist hung by one silver tendon. A last fierce bite, a last fierce wrench—Man would not take her this time. Three-legged she vanished in the gloom, nor cast a glance behind.

* * * * *

Dawn rose from yellow shroud of mist, a wrinkled, haggard, spectre dawn. The gin held fast its spoil—the twisted pulp of flesh and fur, the oblation to Man's sovereignty.

Down mournful hedgerows dripping tears of snow, dragged Fuseline, three-footed, smudging a crimson trail.

Now that the sacrifice was past, her force, her energy collapsed.

Blindly she dragged, unconsciously, until across the clouding of her brain flashed Instinct's lightning warning—*Sleep or Die.*

She checked her perilous open course; she whipped through thorny hedgegap; through trellis-work of leafless, trailing bramble.

She reached a snow-capped drift of leaves, in whose soft, feathery pile her feet sank deep.

She coiled on it to lick her wound, and then to doze, and then to sleep—a sleep profound, nerve-, tendon-, muscle-laxing; a sleep in which her warm young blood coursed healing, soothing, mending.

Twelve hours she slept, and, waking, licked her wound afresh, and crept to the hedge-border. She gazed; she listened; instinct-taught she mapped a bee-line to her home.

Softly she moved, bent low to earth, snaking her head between the tufts of grass.

And, when she reached her alder-stump, she swarmed it. Despite the crippling of her limbs, despite the weakening loss of blood, she gained her hole, and flung to its embrace, as tired-out child flings to a woman's lap.

Six days the alder held her. Hour after hour she licked her stump—and fever was her food.

At last she issued, grid of skin and bone, owl-eyed, droop-shouldered, pitiable, like cripple whose infirmity strengthens his prayer for alms.

But nothing now could drag her to the village, nor even to the common waste, where fowls ran riot after food, and grit to build their eggs from.

Her forest was sufficient. She waited for the Spring. The Spring would bring the buds again, and, with the buds, the birds.

And, in two tepid nights, Spring came.

Each sunrise she had scanned the sky, had listened for the swish of wings. She heard them now, high overhead, like surr of floating silken train, like murmur of incoming tide, voicing desire and hope.

The vanguard soon sped northward. But after them would travel the main army, to quarter on the forest, end to end, to plot a web of joy, and love, and music.

Memories of spring-time feastings rose to mind; of thrushes ambushed in their leafy hidings; of pine-trunks scaled to attack bewildered doves; of crows' nests stormed and pillaged.

As yet her spoils were meagre. She must await the pairing-time, the nuptial flights, the scoldings, wranglings, combats.

The weeks would shape their ordered course. She looked for easy feastings, for feastings morning-scented, evening-stalked.

Leaf raced with leaf, shoot swelled to bud. The green gained mastery of the wild, gained mastery of the sunshine. Each thicket held its nursery, each briar, each thorn was tenanted.

As whim impelled her, Fuseline fed.

Sometimes along the skirting fence of bramble, sometimes aloft, in pine, or fir.

Blackbirds were easy twilight prey. They perched low in the thickets. They sang full-toned, in stations predisposed, their challenging passionate love-notes; love-notes which broke, and swelled, and broke.

Unseen she slipped beneath them. The bird sang on; she wormed six inches further; the shrilling ceased; she

checked and closed her eyes. What was she but a shadow in the tangle; a thickening of the knotted trunk to which she clung close-welded?

And presently she gauged her leap, and seized her screaming prey, and stilled its screaming.

Yet for such chase her skill was sorely hampered.

The loss of limb meant slower leap, meant balance less assured. Often she missed, and screech of fright alarmed through the wood—the prelude of long weary wait in ambush.

The last slow blossoms of the oak yielded to May's warm sun. In robe of green the Forest met her Lord, in robe of green ablaze with virid gems, with emeralds, beryls, chrysolites, with tourmalines, with jacinths.

The insect hum innumerable, the whisper of the burgeoning leaf, echoed, in drowsy undertones, the music of Spring's wooing.

The birds' song was a livelier acclamation.

They filled the air with pipings, twitterings, churrings, with whistle-calls, with bubblings, chirrupings, sizzlings.

And Fuseline picked her course unheard, and reached the thrush's nest unseen.

The mother bird, deep sunk in the nest's hollow, spread ruffling feathers to conceal her brood. But not for fear of Fuseline, though fear stared from her haunted eyes. A bird of prey had sighted her. He rode at anchor in the blue, swaying, yet holding station. Her eyes had felt his eyes. Instinct restrained her motionless, and bade her shield her brood with her own body.

A pipe of call-notes from the wood proclaimed the enemy sighted.

The stragglers flocked together. The crows cawed hoarse-toned signals tree to tree, made plain the danger, shirked attack. Let him attack them first—and they would meet him.

The Buzzard took no heed of them. His eyes were on the thrush. He swooped, but never reached her.

He checked to grip the nearest branch. One claw held him in station, its fellow twitched in air. His neck stretched out, his curving beak gaped challenge at his rival.

And Fuseline reared face of hate against him, and snarled her lips, and bared her teeth, and flashed his challenge back.

Between them cowered the mother thrush, deep in the hollow of her nest, a beak, a tail, two frozen eyes, shielding her brood beneath herself, stilling the pipings of distress which her own heart-throbs warranted.

So Greek met Greek, the bird of prey, the beast of prey, across a common victim. Their eyes glanced hatred, clashed like swords.

And Fuseline struck home the first.

Like dart she loosed in air, like dart she bedded in the mark.

Full weight she struck the breast-bone of the Buzzard, and jerked him, like a squirrel, from his bough.

His wings swayed flailing in the air, plunged crashing through the twigs. His talons forced her hold and gripped her back.

Skywards he slanted heavily, his burden dragging at his flight.

His vengeance should come later.

Whirled, shaken, spun in dizzying, airy spirals, tossed on the windy ocean of the sky, the beast would surely sicken. Then his crooked beak should drive at it.

But this was not to be.

At first the pendulous rocking swing, the parting from earth's solid base, bewildered, palsied Fuseline.

Eyes closed, she dangled limply, unconscious of the deepening gulf between her and her world.

But presently she writhed about, infuriate, gnashing at the claws, and, before beak could aim at her, reached the broad breast, and fastened with her teeth.

A gush of blood jerked spouting from the wound. As one who feels a mortal stroke, the Buzzard threw his head back.

His talons slackened, loosed their grip, and Fuseline hung dangling from her tooth-hold.

But, with a twist, she swung aloft, and, planting claws deep in the feathered flanks, mumbled the bleeding, quivering flesh, and burrowed to the heart.

Once more the talons clinched on her, stiffened this time in throes of death, stabbing her lungs, her entrails.

Upwards the huge bird soared, his supreme effort spent in flight, up, up, towards the Sun.

And suddenly his pinions drooped. He swayed, he swung, he foundered.

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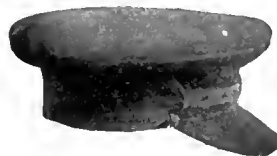
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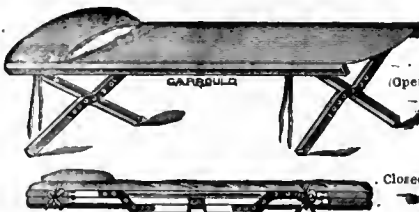
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THE BREAKING OF BARRIERS

By MRS. ERIC DE RIDDER

SLOWLY, but very unmistakably, a change is coming over our entire social system. We are undoubtedly growing less aloof: The icy remoteness that clothed us as a nation generally and as individuals in particular is visibly melting. Of that there can be no shadow of doubt. Asking questions is apt to be a profitless game, when there can be no satisfactory, or at best only a partial, answer. Nevertheless, it is a fascinating pursuit, and we are likely to continue asking them. Many people are asking many questions at the moment, but only a very few are finding any solutions. These, when found, generally admit of infinite argument. It is plain that the England of the future can never be the England that existed before August 4th, 1914. We have been brought out of ourselves, forced to look at things through unprejudiced eyes, shaken and battered out of preconceived habits and ideas. It is all profoundly interesting, but how and when will it all end?

One of the immediate results of the war has been the bringing together of the classes. Men of vastly different social position are fighting side by side in the ranks of the army. Great ladies and tatterdemalions—the feminine gender—have worked in the same room, cutting-out, basting and making the historic shirts for soldiers and sundry other garments. The upper ten have come into contact with the submerged ninety more closely during the past few months than at any other period of their lives. This, perhaps, is particularly true where women are concerned, for schemes for the common weal are occupying most people's attention just now. People, who formerly had little thought beyond themselves, go out of their way to bring interest into the lives of those less fortunately placed. It is an astonishing mix-up, brought about by the forcing-house of events, the result of which cannot at present be even remotely seen.

The New Charity.

Many women must have realised for the first time in their lives that there are no more severe critics of the well-to-do than their poorer sisters, and that great efforts must be made and maintained to keep these critics' approval. For that reason the old system of charitable help is over and done with. Ladies spending their time making "ugly garments for the deserving poor" can no longer be satirised. Charity to be of any use at all must be clothed in an up-to-date guise. It must be a workable and welcome proposition, otherwise it must fail to hit the mark and be worse than useless. The most successful charities at the moment are those which do not mask themselves beneath a charitable cloak. This may be paradoxical, but, like many paradoxes, it is undoubtedly true. One of the most successful works now being done in the East End amongst people affected by the war is that of a weekly entertainment and tea to which a penny admission is charged. This, of course by no manner of means covers the expenses of the entertainment that is provided for by private enterprise, but the idea of getting something for nothing is forthwith abolished. From all points of view it is an excellent proposition; both classes meeting are giving something. The people who sing, play, act, supply the tea, and make all necessary arrangements, not only provide a certain amount of money, but give a considerable slice of their time. Not only does it mean an afternoon's occupation, but the difficulty of reaching the spot is no small matter. By no manner of means is it within the shilling taxi-fare radius.

One main factor affecting charitable enterprise is the prosperity of the working classes at the present. It is not a matter of providing material necessities and little else. It is a far more subtle thing than that. The object behind all works of this kind is that of education. It is hoped that those benefiting will gain a sounder outlook, and be able to stand firmly on their feet throughout all the changes or vicissitudes fate may have in store. This education does not begin and end with the penny visitors. Those in control are always learning, they say, and many are making careful study of a matter to which in days of yore they hardly gave a thought.

The Criticism of the East End

One effect of this small admission charge is the fact that the audience thereby is entitled to criticise. And criticise they certainly do. It is far more difficult to please an audience in Lambeth or Hoxton than one sitting on spindle-legged gilt chairs in a house in Grosvenor Square. The reason no doubt is the forcible one that while the first listen the second in all probability do not, but whatever it may be, the result is the same. The consequence is that infinite care is taken by those responsible for the entertainment. If the entertainers do not please the entertained, they feel they have lost the main object of their lives. It is one of the signs of the times, and yet another proof that "the old order changeth." People in one section of society are learning to respect and consider the opinion of those in another. And those in "the other" are proving that the leisured classes are by no manner of means so selfish as they are made out to be, but willing to

be sympathetic and helpful in a wholly unexpected way. Numbers of women will never forget the lessons the last few months have taught.

The great factor at work behind the scenes is that of the common burden. Every woman in the country to-day, be she high or low, rich or poor, has the same hopes, the same fears, the same maddening feeling of powerlessness. It is fortunate that there are outside interests to which we can devote ourselves; that we can do a great deal of useful work for the country, indirect though it be. Otherwise we are back in the position of the lady of medieval times, who, having bade farewell to her lord departing for the wars, sat down with folded hands to await his return. Inaction and the twentieth-century temperament are bound to be at variance.

Cosmopolitan London.

Our insular character is also departing. London, and indeed the whole of England, is the home for countless people of different nationality to our own. We hear French spoken almost as generally as English, we are brought into daily contact with people of different customs and ideas. It is also worthy of note that we are willing to help other nations as well as our own. Some of the best supported works are those intended to benefit one or another of our Allies. We have proved that though charity may begin at home, it is not by any manner of means obliged to stay there. Insularity is being slain on every side, and there must be few who will regret its burial.

We have often been warned, frequently with great truth, against the dangers of undue optimism. The most confirmed pessimist, however, will surely admit that there is a marked spirit of friendship in the country to-day. We are fortunate in many things, but in none more so than this.



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BOOKS OF THE WEEK

A LITERARY REVIEW

MR. NOEL BUXTON and his brother have written an unpretentious but extremely important book. It deserves the widest notice, for it broaches an urgent question of policy upon which they have a unique claim to pronounce an opinion. The events in the Dardanelles have brought home to average Britons the important part which the Near East is playing in the War. Those who had made a long study of the Balkans knew from the first that the attack upon Serbia was something more than a pretext; that for years Germany and Austria had aimed at expansion towards Turkey, across Macedonia and the Balkan States. Austro-German diplomacy has had its gaze fixed upon a not too distant future when the decaying Turkish Empire should become an Austro-German dependency. Macedonia was on the road to Asia. Nearly twelve years ago, returning after a tour of inquiry in those regions, I had occasion to report that agents of Austria, political and commercial, were permeating Macedonia. Later, when the whole of that region was partitioned among the victorious Balkan States, it became almost certain that Germany and Austria would endeavour to seize by force what they had failed to win by intrigue.

THE EAST.

It is safe to assert that if the Germans could have been victorious in the war, the Balkan States would have fallen entirely under their influence, Macedonia would have been annexed, and in a short time the whole of Turkey in Asia, and probably Persia also, would have become parts of the German Empire. That has now become unthinkable. If we would understand what a tremendous asset the Balkan States may yet prove to the Entente Powers we should turn to

"The War and the Balkans." By Noel Buxton, M.P., and Charles Roden Buxton. (Allen and Unwin.) 2s. 6d. net.

Even high diplomacy cannot ignore a measured statement on this subject by Mr. Noel Buxton. His extraordinary prestige in the Near East is not generally known in this country. For thirteen years he has travelled to and fro between England and the Balkans. In London, through the Balkan Committee, he brought together nearly all available expert opinion, and focussed it upon the task of clearing up misunderstandings. He was in communication with those similarly interested in foreign capitals, and so closely was he in touch with the people and politicians of the Near East, so completely was his disinterestedness recognised, that he attained a prestige there which would be hardly credited in this country. Since the war broke out, he and his brother have spent four months in Roumania, Bulgaria, and Serbia, and they are, therefore, at this moment, possessed of the latest information. I mention these personal matters to show that this book must not be regarded merely on its merits as a piece of literature, but as a statement with an immense weight of authority behind it.

The military situation at present dominates all others. The first question that will be asked is, what have we, Great Britain and our Allies, to gain from the adhesion of the Balkan States? The answer is: "the forces of the Balkans, if united, are equal to the force of a great Power." The authors estimate these forces at 1,300,000 bayonets. This is a very cautious and conservative estimate. The real number of effective troops would probably be nearer two millions, composed of some of the best trained fighting men in Europe, many of them veterans who have served in two strenuous campaigns. It might be added that a neutral Roumania affords the enemy their only economic outlet in the East.

Secondly, what is the means of securing their adhesion? The stumbling-block at present is Bulgaria. All of these States desire to expand, but Bulgaria can only expand at the expense of the others, who stripped her of territory at the end of the last war. But how can Roumania, Serbia, and Greece be induced to part with territory to Bulgaria? Here again the answer is simple. They can be doubly and trebly compensated at the expense of Austria-Hungary and Turkey, who together rule large territories properly Roumanian, Serbian, and Greek. Transylvania should go to Roumania; Bosnia, Herzegovina, Dalmatia, and Croatia, to Serbia; Smyrna, and other districts on the Asiatic littoral, to Greece. Here we have the gist of the argument:—

It is beyond question that there are terms which, while not alienating Serbia or Greece, are sufficient to induce Bulgaria to range herself on the side of the Entente . . .

The attempt to persuade the Balkan States to make voluntary agreements with one another should be abandoned . . .

The arrangement contemplated must be dictated from without. England must take an equally prominent part with France and Russia in dictating the terms. . . .

Germany and Austria have already made definite promises. . . . It is not too much to say that the diplomatist might take a leaf out of the book of the soldier and the sailor. At present, while military and naval action is being pressed forward with determination and high technical intelligence, it is entitled to more adequate support from diplomacy than it has hitherto received.

The last sentence is important. Diplomacy has a chance to contribute to *success in war*. When such issues are at stake the Foreign Office can no more afford to be idle than the War Office or the Admiralty.

"A History of Persia." By Lieut.-Col. P. M. Sykes. (Macmillan.) 50s. net.

It is impossible to resist the fascination of this book at a moment when Constantinople, the ancient centre of civilisation, is again threatened by an invading army, and the countries of western Asia, which through thousands of years have been tossed about from conqueror to conqueror, are again to be re-shuffled. Needless to say, in writing the history of Persia, Colonel Sykes has not attempted to confine himself to the country which now goes by that name. The Persian Empire at one time included nearly all that is now Turkey, and much besides; its history cannot be separated from that of the Hittites, the Assyrians, the Babylonians, the ancient Greeks, the Romans, the Arabs, the Mongols, and the Turks. Colonel Sykes has indeed erred on the side of covering too wide a field. He has told us so much about contiguous Empires which have figured prominently in history, that he has often failed to disentangle the features of the distinctively Persian, or Iranian, peoples. He has lived and travelled for twenty-one years in the country, and he, if any one, should be able to trace the genesis of what is characteristically Persian in the habits, customs and institutions of the people. He justly claims "to have acquired to some extent the Persian point of view," but there are times when this excellence proves a weakness, and leads him to over-estimate the glory of territorial conquests and eastern despotisms, and to think too little of racial customs and traditions.

Of course it is no easy task to unravel these obscure pages of history. The cuneiform inscriptions do not tell us much of the lives of the people. Ancient records busied themselves with the affairs of Kings and Courts, and ignored the things which are more important to the scientific historian. It is only by reading between the lines that modern research can re-construct ancient civilisations. Colonel Sykes has followed the more straightforward course, but even so, the record is valuable as well as romantically interesting.

There is no other complete history of Persia embodying the results of recent researches. He has described the natural features of the country as no one unfamiliar with it could have done. He has begun from the very beginning, showing us a primitive, predatory people existing close to the mighty Empire of the Assyrians, and falling under their sway. He contrasts the civilisation of Babylon with the brutalising influence of Assyria. He describes the appearance of the Medes and the Persians, who over-ran the older Empires under the leadership of Cyrus and Darius, and there is a short but particularly interesting chapter on the refining religion of Zoroaster. There were great epochs of revolutionary change which are not all of equal importance in their effects upon civilisation. The conquests of Alexander were large, but their effects were less lasting than the arrival of Christianity, and, for Persia, far less convulsive than the arrival of Mohammed and the Arabs, who effected more lasting changes by their religion than by their swords. We must remember that the Persians who preserved their racial character in spite of an apparently endless succession of despotisms, were Aryans. They first figure in written history as men who were taught "to ride, to draw the bow, and to speak the truth." In the ninth and tenth centuries, as the author reminds us, learning, literature and art flourished in Persia when Europe was plunged in barbarism. Firdawsi, Nizami, Sadi, Hafiz, and Omar are only a few of the great names which make Persian literature glorious, and can we find a more interesting definition of poetry than that given by Nizami?

Poetry is that art whereby the poet arranges imaginary propositions and adapts the deductions with the result that he can make a little thing appear great and a great thing small, or cause good to appear in the garb of evil and evil in the garb of good. By acting on the imagination he excites the faculties of anger and concupiscence in such a way that by his suggestion men's temperaments become affected

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AND
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SATURDAY, MAY 22, 1915

[PUBLISHED AS
A NEWSPAPER]

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[By Joseph Simon, R.B.A.]

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A GLIMPSE OF WAR

THE BRIDGE

By W. L. GEORGE

PRIVATE BRADDEN was conscious of haste and grievance. With three other Stourshires, he knelt upon the soft, sweet-smelling bank, clumsily nailing on the driven pegs the boards to make the platform. All about him was a crowd that seemed without order or purpose, for the Stourshires were not practical engineers and, rather like locusts, swarmed clumsily about the bridging train which the R.E.'s had left behind, going off with their bigger pieces to build the main bridge for the artillery a little further up stream; they had left to the despised infantrymen the rough bridge that was to carry the ammunition carts. As Private Bradden banged down the boards, and hit his thumb, and swore, he observed the vast litter made round him, of beams for trestling, of short pieces marked with a mysterious "T," rolled lengths of rope, and of incomprehensible thin lathes which poured out of the waggons when their slides were pulled down. The Stourshires were furious because they were left in support and on menial engineers' work, with their puzzled officers who anxiously helped their memories of bridge-building with little pink books.

"Ain't no job for a man," he repeated from time to time, gloomily. Then two boards ingeniously nipped his knee. He swore at everything in general.

The Stourshires were paying the penalty of victory, for quite unexpectedly their division had rushed the third line of the German position and now, far beyond the little river, Private Bradden could hear the steady crackle of rifle fire. From time to time he heard above his head the squeal of shrapnel, bound for the fighting lines three miles ahead. "And we here!" he thought, angrily, "messaging about on the other side of fifty feet of mud!" He was unjust, for the unexpected victory demanded a supply of ammunition, and a hint of the need for the bridge was to be found in the motor field-kitchen which, three yards off, had stuck in the mud over the axles, impotent, its fires out.

He went on nailing. The platform was nearly done. And those blighters not ready with the trestles! Ah! There they were: from the confused crowd upon the bank came at last six men, carrying the first transom lashed to its supports, the lieutenant following proudly his work of art. Then he was in the river: quite suddenly as the water ceased below his knees, so shallow was it, and as he felt the suck of liquid mud, Private Bradden understood and was ashamed. The beam was in his arms; more than heavy, it felt bulky, a gigantic thing under which he staggered with his pal, shoulder against shoulder, their faces hot and sweating, their legs already cold and sticky with ooze. There was a swaying in this big thing he carried that was hard against his cheek. And yet he staggered on a foot or two, breathless, just able to gasp, "Yes sir," in reply to orders. The base of the supports seemed held in the mud as in glue; it was in glue he struggled, desperately kicking with his feet to find something to shove against, and somehow, it seemed, sinking deeper with the mud rising higher, freezing him up to the waist. He knew only then that he must cling and cling blindly to this trestle. He felt hasty hands above, tugging it into place. And then, as he stood so fixed, thinking of nothing, holding only, no longer a man but a swaying, limp vice, he felt them nail the road bearers into place, between trestle and platform. He could only hold, not think, for every blow of the hammer went through the beam into his body, jarred his head. It seemed to last a very long time. Little objects distracted him, a half-company of A.S.C., deserting their waggons and floundering through the mud, carrying upon their shoulders small cases of cartridges. He saw a hussar smothered in bandoliers. The horseman fell, rose again, like a pillar of grey slime. They could not wait for the bridge, then, and suddenly Private Bradden felt proud of what he did.

"This'll save 'em a wetting," he thought.

The shells still passed over his head and it seemed to him in his dulness that the sound was more distant, as if the British line were driving on. It comforted him, this sound, and yet it angered him to think that it should so swiftly draw away.

With enormous efforts, as if tearing himself from a grave, he hauled himself out of the mud, climbed up the trestle, half sick with the struggle, his legs all clogged and sticky with slush, but at once he was nailing on the road bearers. His limbs trembled, he was exhausted by the powerful clinging of the river's miry hands. As he nailed and cast the road bearers towards the next trestle, he could see the water between the lathes, grey and slow, malignant, as if it watched and regretted not having sucked him under. All about him was still the fever of haste, men at the head of

the bridge, throwing out the road bearers, men below his feet securing the trestles by driving supports round their base, men in front of him, half in water, half in air, driving the further wooden outpost into the mud with heavy, clumsy blows.

The bridge was growing, it was magical. Now four trestles were lashed and bore the road, while the chesses were already laid across the first twelve feet. And yet it was not fast enough, so greedy a mouth was there at the other end, clamouring for cartridges. An endless line of the A.S.C. floundered into the water, clumsy as it fell, with its little bundles of ammunition. A little further up stream he could see the North Wessex, unable to wait, hurling itself into the water, half-swimming, half-wallowing, and, it looked, drowning a little. . . .

Head down to the bridge he nailed the chesses into place, little lathes that seemed too thin to bear a cart, he nailed urgently, silent now when he struck his hand, like a punching machine rather than a man. A voice next to him said:

"One of their airplaners."

Private Bradden did not look up, though mixed in with the distant firing he now heard the rattle round him of hundreds of rifles and the scurrying barks of the machine-guns. He knew what it meant if the observer was not brought down, and still went on nailing, by instinct rather than will. He was conscious of an officer by his side, by his leggings only, impatient leggings that stamped with eagerness, as if afraid the bridge would never be built. There was fever in all their bloods. On the bank he could hear quarrels among the transport men, as waggon after waggon arrived at the river-side and the horses backed away from the water, guessing the mud, refusing with lowered ears. Then came the first shell. Ah! So they had not brought that aeroplane down. Private Bradden put out a hand behind him, seized a road bearer, and flung it out towards the next trestle where another hand caught it. A shell burst in the water a few yards off. It was pretty, like the waterspout in the pond in Municipal Park. Private Bradden thought swiftly of the nursemaids in Municipal Park at Stourton, so far away. A shell fell ahead upon the bank; he saw the mud fly like a wet brown leaf. He worked faster now. Behind him he heard a gurgle and a groan, something fall into the water heavily. "One gone," he thought, and struck in a nail. Then for a second he stopped as, very slowly, under his eyes, through the slit between two chesses, he saw one of the Stourshires floating past, greeny-white under the water, with a zone of pinkish water round his peaceful face. Nail . . . hit, hit . . . nail, wipe the sweat from your eye and hit again. He thought only of that though now the shrapnel fell thicker. He could hear it squeal, then burst in an exultant roar. . . he heard it spit as, here and there, a bullet chipped the wood. Though he could not see it he guessed the transport upon the bank waiting for him, Private Bradden, organiser of its victory, to finish its bridge.

On the other bank, men holding out their hands to him in appeal, men got into his way, they shoved, their faces were hot, their limbs felt heavy and wet with gluey mud. He turned to leave the bridge. Already it was pitted everywhere with bullets. He laughed; it was as if the wood had had smallpox. He ran back along the bridge, the others behind him. In the river were half a dozen bodies that had fallen in, head first, and stuck in the mud oddly, their feet in the air. One leg was kicking feebly. Private Bradden bent down across the trestle, half in the water, to draw the man out.

Above the sound of the shrapnel he heard the rumbling of the waggons as the first two flung themselves on the bridge, so fast as they dared, towards the safety of the other bank. Everything seemed to shake round him, the lapping water, the writhing limb he clasped, the sodden timbers to which he clung with one hand and both feet. He heard curses, and blood rushed into his lowered head, dimming his eyes. Then something struck his feet and he fell into the water on the top of the creature that struggled so feebly. It was crowded and crushing in the water, for things fell all about him, large things that plunged and struggled, beasts that screamed. His hand touched a horse, and he felt it grow warm and wet. For a moment he was living in a world where all was heavy and wet.

When at last he half-stood, half-knelt, in the stream that flowed on unruffled, with its burden of mud and blood, he saw just beyond the place where the waggon had fallen, with its horses plunging and half-drowning, the place where he had stood upon the bridge as he leant down, blown away by an explosive shell as if it had been cut out with a knife by a gigantic hand.

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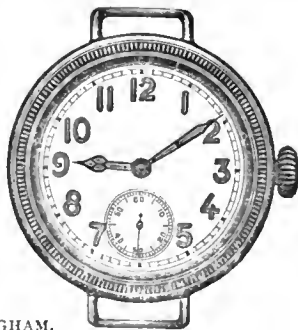


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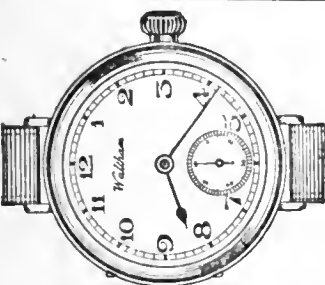
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THE WAR BY LAND.

By HILAIRE BELLOC.

NOTE.—This article has been submitted to the Press Bureau, which does not object to the publication as censored, and takes no responsibility for the correctness of the statements.

In accordance with the requirements of the Press Bureau, the positions of troops on Plans illustrating this Article must only be regarded as approximate, and no definite strength at any point is indicated.

MUCH the more important of the two great series of operations which we have witnessed during the last few days is that which has thrust back the Russians from the Carpathians in the East and threatens, as a matter of sentiment, the re-entry of the enemy into Przemyśl; and saves, a matter of strategical importance, Hungary from invasion. But the Western operations, as they concern us more nearly, will be dealt with first.

They have a certain connection because, large as are the last new levies of the enemy, the greater part have been thrown into the Eastern field, and have left the Western line for the most part not in strength to resist the attacks delivered upon it; or, rather, not in sufficient strength to permit so great a concentration as was attempted against Ypres without weakening dangerously other parts of the line.

It by no means follows that great enemy reinforcements will not reach the enemy line shortly. It is, on the contrary, highly probable that the enemy will attempt a determined offensive here the moment he discovers either that he cannot break the Russians in the East or that he has the good fortune to pin his adversary there behind some line. Meanwhile the story of what has happened in the West is a story of, upon the whole, a superior Allied offensive.

THE ALLIES' SUCCESS IN THE WEST.

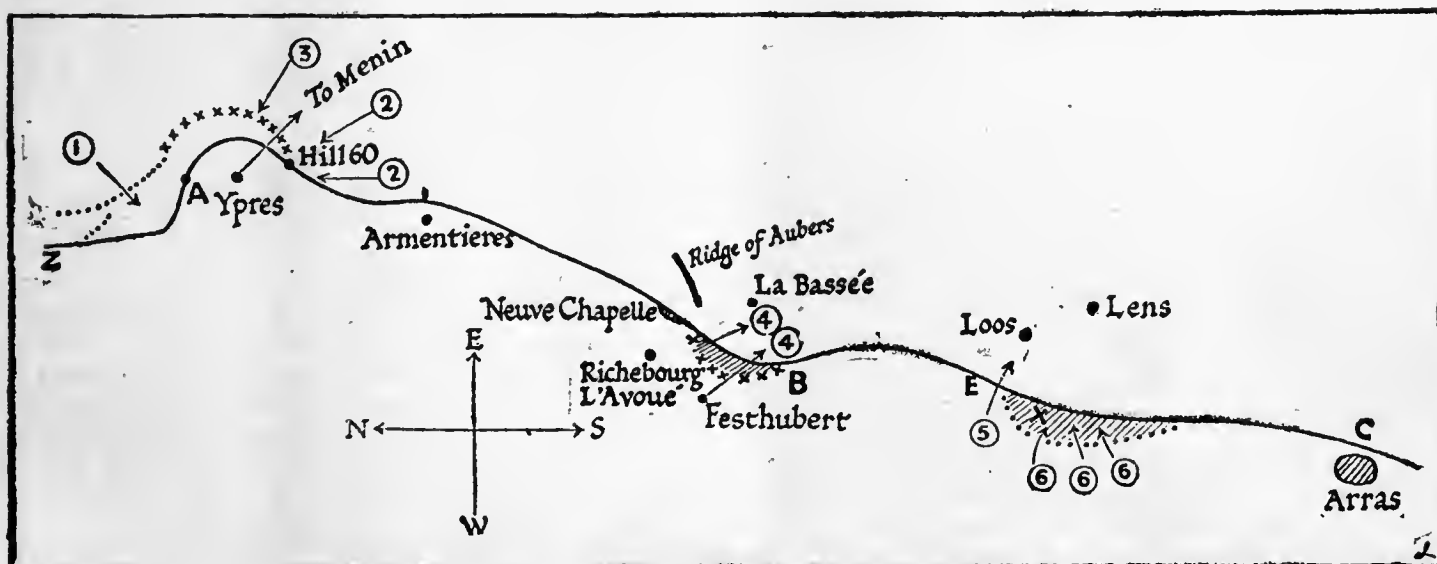
In order to understand the very considerable success attained in the West during the last few days against the German lines that run from the neighbourhood of Arras to that of Ypres, we must first seize the territory as a whole.

We are here concerned with a line approximately fifty miles long—perhaps, counting all its sinuosities, more than fifty miles. It has behind

it a greater accumulation of German ammunition in dépôts, a better gridiron of communications, and, in proportion to its length, a far greater body of men than any other section of the German trenches in France and Belgium combined. It is also the point where the British and the French forces join. It is therefore the sector upon which the enemy has both been able to develop his strength to a maximum and has desired to obtain a decision over and over again. He is still occupied in that attempt.

The British contingent holds on this line, roughly, the sector A B. To the north, beyond A, there is a sector A Z, which is continued up to the sea by a mixture of French and Belgian troops. To the south of the British contingent, from B to C near Arras, passing in front of the line in front of Lens, the line is French again, held mainly by Regulars, and continues French all the way to the Swiss mountains, 400 miles away.

Now, the pressure exercised by the Germans upon this line was first delivered very violently and with the use of poisonous gases in the last week of April against the dent which corresponds to the thrust of the arrow (1). It had the effect of pushing in the line dangerously from the old position, marked by dots, to the new position, marked with a full line. The object was to cut off, if possible, the projecting piece or "salient" round Ypres, and, if fortune was very favourable, to break through the line just where the British and the Allied forces joined. Under the pressure of that attack the line gave way, as I said, from the dotted position to the position A Z. Meanwhile the old British line, which I have marked with crosses, in front of Ypres, had also to fall back to where the full line stands in the sketch. While the British line thus fell back nearer Ypres, the enemy delivered a very violent assault indeed



upon it during and after its retirement. During the first days of May he continually attacked Hill 60 from the south and south-east (along the arrows (2) (2)), and meanwhile prepared his principal attack, which he launched upon Saturday, May 8, along the Menin road, in the direction of the arrow (3).

For the purpose of thus concentrating all his weight against the British salient and attempting to crush it in, he had, in spite of his considerable reinforcements of winter-trained men, to concentrate large bodies of troops.

The whole thing was a repetition of what has happened over and over again in this trench warfare. Whether the enemy draws men from up the line for the purpose of attacking or for the purpose of defending the second point, he is bound to be weakening himself somewhere, and the better airwork of the Allies, their more rapid concentration, and, recently, their superiority in numbers, both of men and of heavy guns, permits them to take advantage of that weakness, and such an enemy concentration is always followed by sharp counter-attacks upon the weakened point.

That is exactly what happened after the enemy had thus drawn men round Ypres during this first week in May. There followed at once, with the second week, sharp counter-attacks against him to the south. The second of these in order of time, but the one which we will take first because it concerns the British contingent, was the British counter offensive against the enemy's own salient of La Bassée. It began with an attack upon the ridge of Aubers. This ridge stands just in front of that belt of ground at Neuve Chapelle which had been occupied in the memorable conflict of some weeks ago. The British attack all but carried the summit, but failed to hold it, on account, as it was said, of lack of sufficient munition. Had the ridge of Aubers been held a point would have been thrust up north of La Bassée which might have endangered the German hold upon that important junction. But while the attempt to capture the ridge of Aubers upon the whole failed, the next British move amply succeeded.

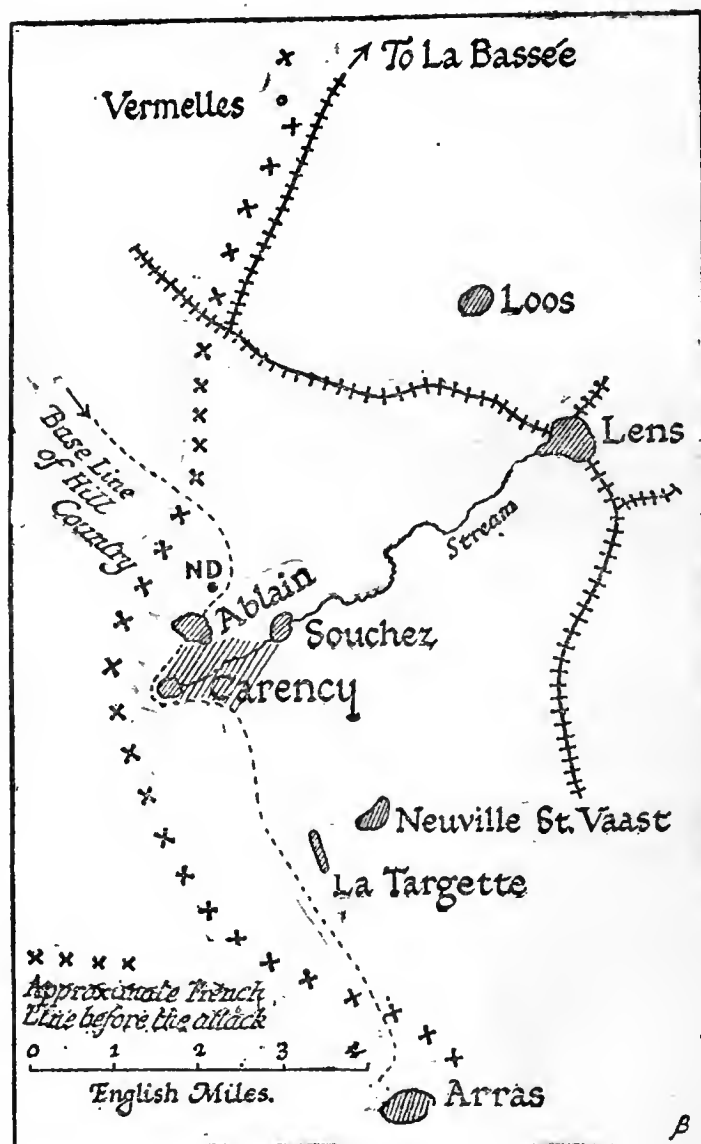
The original line had lain, as do the crosses in the above sketch, in front of La Bassée, forming a very pronounced indentation of our line. Attacks launched at the end of last week in the direction of the arrows (4) (4) from the villages of Richebourg l'Avoué, and Festhubert recovered all the belt marked with diagonal shading, and gave the line the shape it now holds.

Meanwhile, much further to the south, the French were taking action upon a very large scale. All the way from near Arras at C to about the point E, but with especial vigour in front of Lens, they were attacking with the particular object of seizing the point marked X, which crowns a spur of land 300 feet above the plain, and marked, before its ruin, by a chapel of Our Lady of Loretto. From this spur of land one looks down upon the plain beneath all the way to the important railway junction of Lens and beyond, and to hold that spur is to dominate the railways of the plain and ultimately Lens itself.

In five days' fighting, from May 8-9 to May 12 inclusive, the French managed to carry all the shaded portion here between the line of dots representing their old position, and the full line, representing their present advance trenches.

Their first effort was directed along the arrow (5), towards the village of Loos. It was at first successful, but later it failed. But their group of assaults (6) (6) (6), delivered upon and to the south of Our Lady of Loretto amply succeeded, not only in inflicting very heavy loss upon the enemy (including several thousand prisoners and seventeen guns), but what is, as we shall see in a moment, equally important, in establishing a future command over the German lateral communications in the plain below, and their operations here merit a particular description.

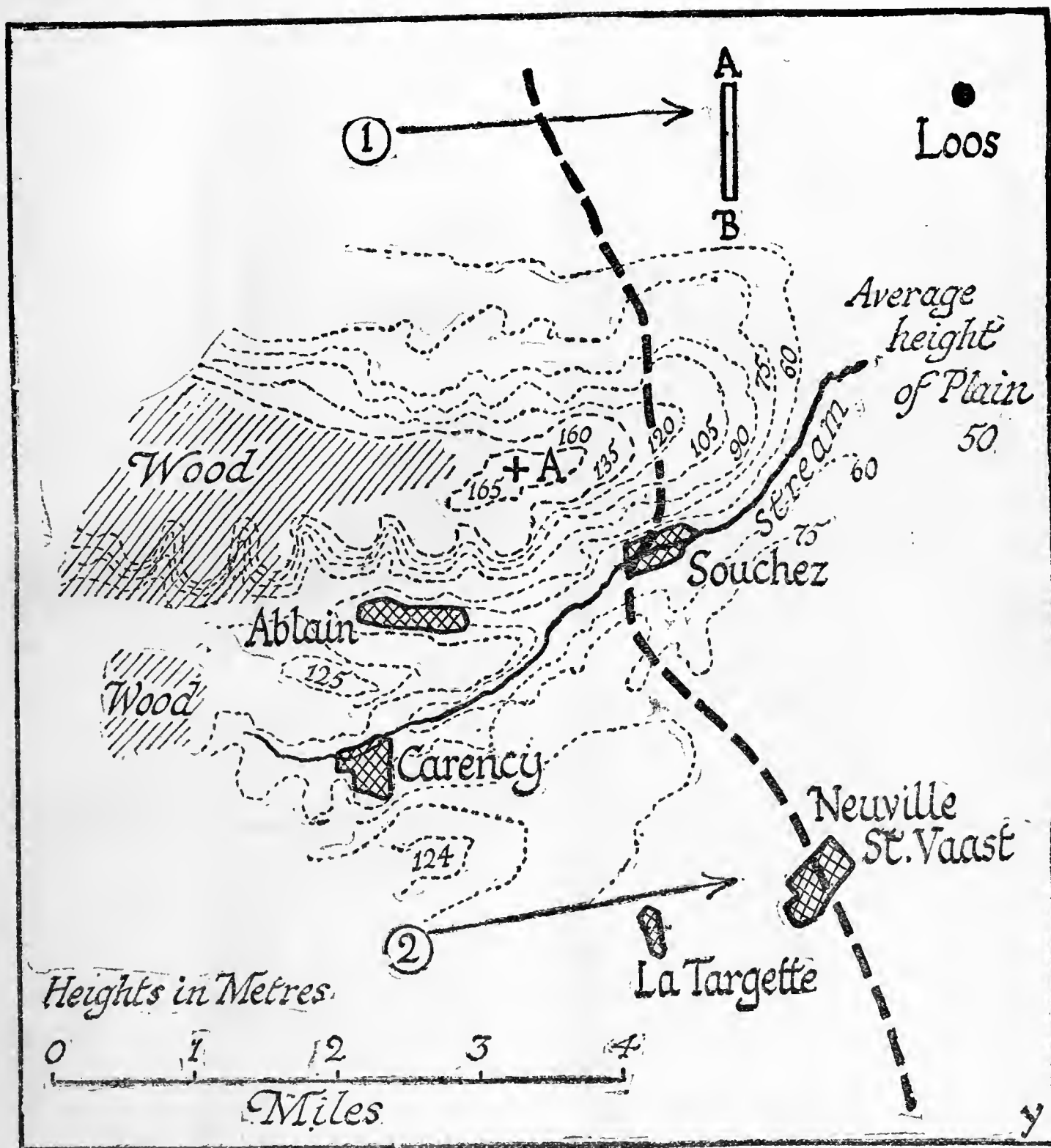
The spur of Our Lady of Loretto and its neighbourhood may be best understood by such a rough sketch map as the following.



There comes down all the way through the Artois from the sea, starting at Cape Gris Nez, passing through St. Omer, and ending just north of Arras, an irregular line of heights, the last of which have their base upon the plain, roughly corresponding to the line of dots on the accompanying sketch.

Everywhere from these heights one overlooks flat country to the east, which flat country holds the main communications of the enemy.

The French line through this ran very much as the line of crosses runs on the accompanying sketch, leaving a pronounced dent opposite the important railway junction of Lens, in which dent the most important point was that marked N D, the chapel of Notre Dame de Lorette upon the projecting spur of the hills overlooking the plain. The Germans had very heavily fortified this spur,



round the ruins of the chapel, and all the valley below in the shaded district of which the three corners are the three villages of Souchez, Ablain, and Carency. The French had made repeated attempts to take this fortified area because, until it was taken, they could not properly watch, and later submit to heavy gun fire, the railway communications of the plain and their junction at Lens.

In this last effort, May 8-9—May 12 they were successful. The details of this action may best be followed upon the accompanying sketch.

They began in the night between May 8 and May 9 by attacking to the north and to the south of the positions. They attacked on the north, along the direction of the arrow (1) towards the village of Loos. They appear to have advanced about as far as the line A B, and then to have lost—on May 11—the trenches there captured.

But on the south, along the arrow (2), after

nearly four hours' preparation upon the morning of Sunday, May 9, they carried first the hamlet of La Targette, and then beyond it a part of the village of Neuville St. Vaast. They made about 2,000 prisoners, captured seven guns, and occupied a belt of territory about two miles in extent.

Their next effort was to force the fortified area Souchez, Ablain, Carency, lying in the valley, below the spur of Our Lady of Loretto, which spur, with its ruined chapel, is marked with the letter A on the above sketch.

They first attacked between Ablain and Carency, and at the same time along the spur towards A. They pursued this attack on the night between the 11th and the 12th, that is between the Tuesday and Wednesday of last week. Against Carency they failed, but they carried the height A, on which the ruined chapel stands. As they already had possession of La Targette and most of Neuville to the south they had already got

past Ablain and Carency on both sides and were nearly abreast of Souchez. In the course of that same day, Wednesday, and in the following night, they carried the wood to the west of and in front of Carency, the hill marked 125 metres to the north of Carency, and ultimately the fortified village itself, accounting for four battalions of the enemy which were as garrison, and taking, apparently, over and above the killed and wounded, about a thousand prisoners.

It is curious to note that the German communiqué instead of being silent upon this success, admits only a tenth of the garrison of Carency, using the words "we lost" in that place from 600 to 700 men. But all communiqués of a reverse naturally minimise its defect, and it is possible that these figures refer to unwounded prisoners. At the end of the whole operation the French were in possession of all the fortified area between the three villages along the stream of the spur of the chapel above, of part of Souchez, and of nearly all the village of Neuville, their line being approximately that of the dashes in the preceding sketch.

THE OBJECT OF THESE OPERATIONS

The question has certainly occurred to nearly all those who read the news in this country, "How are we to estimate the importance of such a success as this of the British near Festhubert or the French at Carency?"

The first, the most obvious, and, unfortunately, the most erroneous suggestion is that one should measure success by the belt of territory gained, and correspondingly measure a reverse by the belt of territory lost, and estimate the credit and debit in the width of such gains and losses of ground.

It is inevitable that this sort of reply should suggest itself to the mind, because, roughly speaking, in all fighting the successful force advances and the unsuccessful force retires.

But it is, as has been frequently pointed out in these columns, a complete misconception of the trench work in the West to estimate it in these terms.

The next less obvious suggestion which occurs to those who watch such movements is to estimate success or failure by the shape of the line held.

They notice a prominent salient and connect it with the idea of danger. They notice a dent in the line and connect it with the idea of a break at that point.

Now, this reply to the question is not so false as the first one, but it is still erroneous, from the simple fact that the "line" in question is not comparable in texture to a thin cord, but rather to a rather tough and broad sandbag. It is perfectly true that if you see the Allied line, for instance, give way badly at one point and see a "V" in it very rapidly and dangerously broadening and deepening, you might argue a tolerably bad breach of the line at that point. Common sense tells everyone that a breach in a line, if it be sufficiently wide and inflicted by a sufficient force, means the turning of what was one large army into two smaller ones, and the rolling up and defeat of the lesser portion.

But this watching of the shape of the line, unless the shape varies very much indeed, is not a true gauge to apply. The real test of success or failure is simply this: *How far has such and such an operation advanced us towards that point when*

the enemy will be compelled to shorten his line or to run the risk of seeing it break?

Now, no one can estimate the full value of an operation judged by this standard, save the commanders upon the spot, who have before them the evidence of the enemy's losses and of their own, who can judge of the enemy's moral, of his shooting, of his air work, and all the rest of it, and who can estimate the number of men the enemy can still put up in front of him.

Roughly speaking, the question we ought to ask in all this struggle in the West and about each particular operation is two-fold, each portion of the answer being directed towards the general reply upon the approach we have made to compelling the enemy to shorten his line; and the two questions are, first, what effect has the operation had as a *preparation* for a final offensive? Secondly, what losses have we compelled the enemy to sustain compared with our own?

As to the second of these two questions, we will for the moment neglect it, because it is difficult to apply to particular actions. We only get the answer in general results after all the evidence has been co-ordinated. It is published with some accuracy by the French General Staff from time to time; or, at least, the conjectured enemy losses are published. This unknown factor is, of course, the most important, because the Commanders of the Allies in the West will not undertake a general offensive until they find that the enemy is nearing the breaking point. To attack too early would be exactly like buying a stock before it has reached its lowest quotation. It would be a waste of energy. There is only one thing that will make them launch a strong offensive before this critical moment, and that would be so decisive a defeat of the Russians in the East as to threaten the approaching return of numerous enemies towards the Western front a week or ten days later. Such an event would indeed precipitate what would otherwise be a premature offensive; but in the absence of such an event, the offensive will certainly be delayed until the critical moment of which I speak.

But the first question, "How far does our action advance us in our *preparation* towards the final attack?" is easier to answer.

Colonel Maude has very aptly compared all this preliminary work to the action of an engineer who is at pains and great expense of time in laying down strong foundations which, when they are once achieved, will permit of rapid and secure building.

Of what nature are these "foundations" which the Allied Commanders in the West are laying down and the efforts in the preparation of which have now spread over so many months?

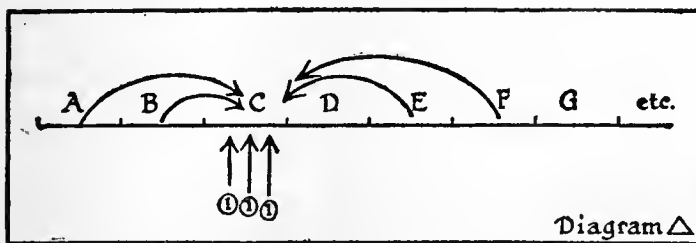
It is a point very well worth considering in detail, because it is perhaps that which is least apprehended in general conversation upon the war.

LATERAL COMMUNICATIONS.

In order to understand this point, it is essential to grasp what is meant by lateral communications.

A fixed line held with a certain minimum number of men (as is the German line across France and Flanders from the Swiss mountains to the North Sea) and so placed (as is this line) that it cannot be turned at either end (reposing, as it does, one end upon neutral territory and the other

upon the water) must not only be defended by the number of men which are the least required to hold it, *but must also be able to concentrate men*



rapidly here or there, wherever an attack upon a particular point is delivered. This is particularly the case when those who are preparing an offensive are superior in number both of men and of weapons to those awaiting, and that is the case at this moment in Flanders and France, so long as the Eastern field draws the enemy away in great numbers.

The enemy holds his line, which we will suppose divided into a number of ideal sections, A, B, C, D, E, &c. He is threatened by an attack in force against him on, say, the sector C, along the arrows (1) (1) (1). He must concentrate as quickly as he can large bodies of men upon C to withstand the shock. He must draw men up quickly from, say, A, B, E, and F. And that, as a fact, is what the enemy has continually done since his defensive campaign in the West opened. Whenever the attack has produced a dent in his lines, he has, at intervals of from twenty-four to forty-eight hours, and sometimes a little more, brought up from other parts of the line reinforcements which have strengthened the threatened place, and often recovered the territory lost.

Now, to bring men thus up and down the line continually there are needed good communications, which nowadays means *railways* (as well as good roads for petrol traffic) running everywhere a little behind the line of the trenches, and roughly parallel to that line. These communications are called *lateral communications*.

The military correspondent of the *Times* has very well described the strength of the German positions by the metaphor of a "crust," which, if it is broken, has behind it a far less persistent resisting medium. To keep that crust intact the enemy must, whenever a blow is delivered against it, mass men by using these lateral communications.

Now, supposing that a commander opposed to a defensive line of this kind intended to strike his blow for breaking it upon a particular date, towards which date he was accumulating great masses of ammunition, and in view of which he was disposing his men and reinforcing as largely as possible the armies at his disposal. Supposing, for instance, that date were roughly the first half of October, how would he proceed in the period preceding that date? What would his preparations be against the enemy during September, August, and July?

It is obvious that when he struck he would not strike in one place only. It would be important for him to embarrass the enemy *materially* by engaging him in many points at once, so that he should have difficulty in reinforcing any one point at the expense of another, and to embarrass him *morally* by leaving him during such a com-

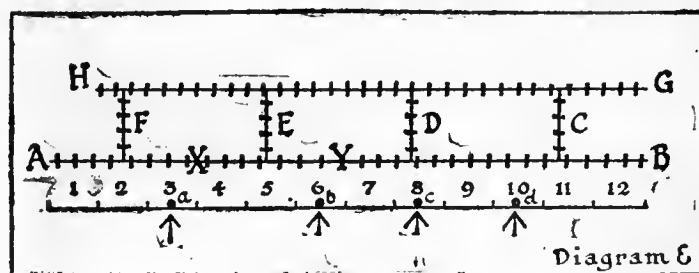
bined attack bewildered as to where the main blow would fall.

Therefore we might expect that on a selected number of sectors, perhaps half a dozen, sporadic activity would be displayed by the offensive, though he had no intention of breaking through, as the effect of any of these partial attacks would have the intention of leaving the enemy nervous about every one of these half-dozen threatened points, and that is exactly what we have seen happening during the past few months.

But apart from that he would have a much more complete and detailed object in his attacks. He would desire to seize, as the ultimate result of each such effort, *points from which he could command the lateral communications of the enemy.*

Observe the effects of this.

Supposing the line to consist of twelve sec-



tors, numbered in the above diagram 1 to 12. In the preparation for the offensive, sectors 3, 6, 8, and 10 have been particularly attacked, but at different times. Now 3, after that 10, later on 6, then 3 again, then 8, then 10 again, and so on.

The effect of all these attacks has been to make the enemy continually move men up and down the line along his *lateral communications*, the railways (and roads) A B, and organise the whole system which has rendered these lateral communications, with their depôts of ammunition and their hospital arrangements and all the rest, essential to him.

Now, when the main attack is delivered at the end of all this preparation, *if upon these sectors 3, 6, 8, and 10 the offensive has secured points a, b, c, and d, from which he can gravely incommode the lateral communications by shell fire*, what is the result? The result is that the enemy, already bewildered and confused by a general attack in several places at once, and beginning to move his troops according to his guess as to where the most violent attack will ultimately develop, finds his power of moving them gravely embarrassed, or, perhaps, in one or two places, actually cut. The offensive meanwhile knows at what point he has been most successful in threatening or even severing the lateral communications and what effect this has had in starving of men one of the sectors to the north or to the south of such a place. If he finds a grave weakness developing on the enemy's side on another sector on account of this interference with the lateral communications, he will at once direct a special effort against that point, and, in general, his success in breaking the enemy's line or so threatening it that it must withdraw, will mainly depend not only upon the previous reduction of the enemy's forces through loss during the months of fighting past, but also upon the command of the enemy's lateral communications which that fighting has gained.

It is true that the enemy will never be entirely dependent upon one line of lateral communications. He will, for instance, be able to say, "If you cut my main line of lateral communications (A, B) or embarrass them seriously in two critical points, such as X and Y, so that I cannot bring up men to help sector 3, for instance, from the other sectors between 3 and 12, as quickly as before, yet I can always bring them rather more slowly in a roundabout method by using communication lines C, D, E, F, which ultimately effect the same object. You cut my lateral communications or gravely embarrass them at X and Y from the positions which you gained during the fighting of the last few months, but I can get away beyond your shell fire by bringing my troops round along the lines, C, D, E, and F, to the secondary lateral communications G, H, with which these lines join up." All extended railway systems show such lines lying one behind another and connected by cross lines.

This is true; with your first lateral communications interrupted you can still, in any country well provided with railways, use secondary roundabout lines behind the first. But in war everything depends, after the factor of numbers, upon the factor of time, and in thus imposing delay upon the enemy's concentration you heavily handicap him, so that he already, by hypothesis, is only just strong enough, if that, to hold the line at all, and when you thus secure that he could not bring up men in forty-eight hours, but only in four days, say, to the threatened section, it may well be that you will attain your object before his concentration can be effected.

Now, if you will take a railway map of Eastern France and compare it with a contour map you will perceive that the action of the French ever since December has been aimed at *securing points from which they can dominate the main lateral communications of the Germans.*

In all save one district, that of Soissons (where a strong attempt to reach the ridge dominating the lateral communications behind the hills of Craonne failed, as we know), the French are now in a position to attack the lateral communications all the way along, and that at the critical points.

They have the outliers of the Vosges above the Alsatian Plain and its railways. They have the heights of Les Eparges above the Woeuvre, and its railways. They have the crest of the ridge at Beauséjour, above the Rheims-Argonne Railway. They have only the other day secured the heights above Lens, and the fight for Notre Dame de Lorette was essentially a fight to get hold of the point from which the junction of Lens and the railways of that plain could be observed and ultimately dominated by distant shell fire.

This point must not be misunderstood to mean that the holding of a height nowadays gives direct artillery domination, as it used to formerly. No one can place guns in a conspicuous position without having them destroyed; but to dominate this lower ground over which communications pass is to have a height behind which you can hide your heavy artillery, from which you can judge its effects, and the attack upon which by infantry is more difficult than such an attack would be across level or falling ground.

THE OPERATIONS IN GALICIA.

We are now in a position, with more than a fortnight's fragmentary news, to piece together the various parts of the great Russian retreat from Western Galicia, and of the less important Russian counter-offensive in the east of that province, and I propose to describe with elementary plans the nature of this very important operation.

The main Austro-German offensive against the Russian positions in Galicia opens upon the last two days of April, the Thursday and the Friday, the 29th and 30th of that month. It was somewhat upon the following plan.

The Russians, who, some months ago, had in their second general offensive nearly reached Cracow, the key of Silesia, were, by a powerful counter-effort of the enemy, thrust back on to the line of the Dunajec and the Biala, the River Dunajec being the principal tributary falling from the south into the Upper Vistula, and the River Biala a sub-tributary falling from the crest of the Carpathian Mountains into the Dunajec before the latter river joins the Vistula. This position to which the Russian armies were thrust back from before Cracow months ago, I have indicated upon the subjoined sketch by a series of dots following the streams which give the position its name. It might also be called the position of Tarnow, because Tarnow is the principal town through which the line passed.

Now the special function of the line thus thrown from the crest of the Carpathians to the Vistula (it was continued beyond the Vistula by further lines up through Russian Poland, drawn in front of the town of Kielce, which continuation I have indicated by dots on the accompanying map) was to protect the operations of the



Russian armies in Galicia against the Carpathians and the effort of these armies to cross the crest of that range and to invade the plains of Hungary. Protected by this screen, as it were, of the lines at Tarnow, the Russians were able by slow pressure to make themselves masters of the three road passes marked 1, 2, 3 on the sketch (the Polianka, the Dukla, and the Jaliska respec-

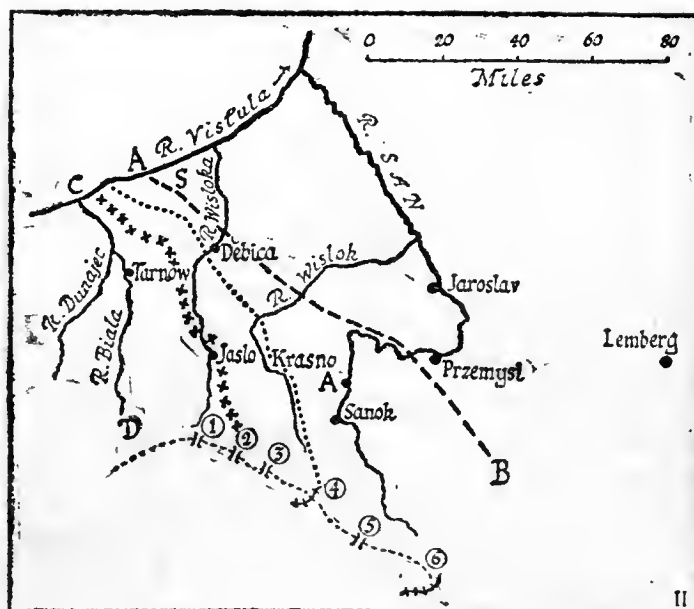
tively), of the Lupka road and railway pass (4), and ultimately of the Lusko road pass (5); while they seemed on the point of seizing them, they had not yet quite mastered the Uzog road and railway pass (6). Beyond this point of the Uzog their line fell away from the mountains northwards and was subjected to considerable pressure from the Austro-Germans, who had there established a solid footing on the Galician side of the hills. The Russian line, as it stood before this great offensive on the part of the enemy and retreat on the part of the Russians, which we are about to follow, lay therefore along the solid line from A to B on the above sketch.

Now, the enemy concentrated in great force against this slow, but successful, Russian advance, bringing up as well as his old formations very large numbers of new winter-trained troops, both Austrian and German, which may roughly be said to constitute his last reserve. Some portion of these had been sent West, as we know, but the greater part were undoubtedly used upon the Galician front. But the enemy did not mass the greater part of his forces against the most threatened point—that is, against the passes which had fallen into the hands of the Russians. He attacked, upon the contrary, along the line of the Dunajec and the Biala, and maintained his assault all during the last two days of April, the Thursday and the Friday, and upon the critical day, the Saturday, May 1, he attacked in particular strength at two or three points upon the Lower Dunajec and at the point of Cestowice at C upon the Biala.

By Sunday, May 2, he had succeeded in his attempt. Not indeed that he completed the full task of breaking the enemy's front and of piercing through, still less of reducing to chaos its cohesion.

The German communiqué, issued with the political object of preventing Italy from coming into the war, grossly exaggerated the effects of these general actions along the Dunajec and Biala front, but, neglecting the political side of the matter, we must remark that the attempt to compel a Russian retreat along this front was successful, and we may further add that it was successful because the Russian munitions for heavy artillery and for field artillery had, as we remarked last week, given out.

This running dry of munitions compelled the Russians to a rapid retirement, which went through the following stages. Upon Monday, May 3, the positions seized by the enemy upon the further banks of the two rivers, the Dunajec and the Biala, were consolidated, and a belt a few miles wide was occupied, in most places upon the further side of the streams. The Russians were compelled, of course, to abandon many of their wounded and a certain number of their guns which had lost their teams or had been wrecked. In other words, they suffered all the consequences incidental to a retreat, but that retreat was perfectly orderly. They left behind them a comparatively thin line of rearguard to permit of the continuance of the retreat unmolested, and it was not until Thursday, May 6, that the enemy were in full possession of Tarnow, the principal town upon the other side of the rivers and the centre of what had been the whole Russian defensive line.

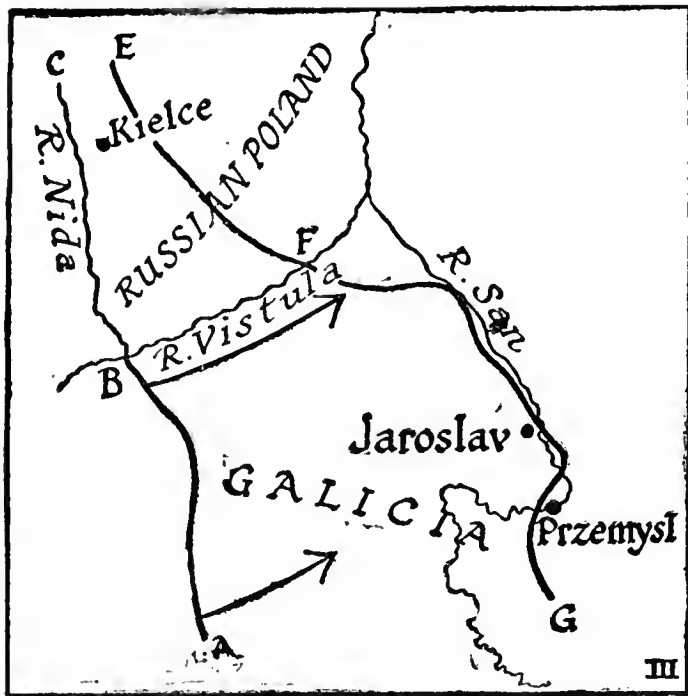


On the same day (Thursday, May 6) the last positions that were being clung to by the Russians on the Lower Dunajec, just before it falls into the Vistula, were given up. The reasons for the greater tenacity of the Russians on the north of their line while they were giving way towards the south will be explained in a moment. On the same day (Thursday, May 6), while the Russians were but just abandoning the extreme northern positions of the line along the Vistula, the enemy upon the south had got as far as the upper waters of the River Wisloka, and the general position upon that day was that the Russian line had fallen back from its old position along the Dunajec to the Biala to a position indicated on the accompanying map II. by the line of crosses. Jaslo, on the Wisloka, had just fallen into the possession of the enemy, and it was with great difficulty that the 48th Russian Division, retreating across the Dukla pass (2), managed to save itself from being cut off.

By Saturday, May 8, this giving way of the Russians upon the south of their line had gone so far that they had already lost the Upper Wisloka altogether, and were back upon the upper waters of the Wislok, a river which bends right round eastward, as we saw last week, and is a tributary of the San.

Krasno fell upon this day into the hands of the Austro-Germans, but the northern end of the line still held fairly strong, and the position on this Saturday, May 8, was that indicated upon the above sketch map by the line of dots, which line also indicates the belt through which the retreat had passed in the course of three days. It will be apparent that by this time all the passes 1, 2, 3, and 4, and possibly 5 as well, had had to be abandoned by the Russians. On the 9th the enemy seized the point of Debica, upon the Wisloka, which point upon the day before had still been covered by the retiring Russian line, and by the 11th he had actually pushed up to the upper waters of the San, and though not yet in possession of Sanok, he had crossed the river just above that town at the point marked A on the above sketch map.

On the same day the northern end of the Russian line, which had been holding out fairly, stoutly, began to retire and fall back to Szezucim (marked S upon the sketch map), and by Friday, last, the 13th, the Russian retreat had straightened



out into the line indicated on the sketch map above by the line of dashes, which I have further indicated on the sketch by the letters A and B, at the two ends.

The full retreat so far, however, had fallen upon the north, only a matter of about twenty miles from the mouth of the Dunajec at C, to A, but upon the south from the head waters of the Biala at D to B, a matter of more like ninety miles.

What was the cause of this greater tenacity in the north compared with this rapid retirement upon the south of the line?

The reason that the Russians thus hung on to the northern positions as long as they could was that a too rapid retirement there would have left a gap between their positions on the north and on the south of the Vistula, and that the thing that was most important to prevent, the piercing of a hole through the general Russian line, might have been accomplished by the enemy. The danger will be appreciated by a glance at the next sketch.

The original line along the Dunajec and the Biala being represented on this sketch by the line A B, the Russian positions were continued north of the Vistula along the lines of the River Nida, and so up following the line B C covering the Russian-Polish town of Kielce, and ultimately reaching to in front of Warsaw in the north.

Now, as A B retreated towards the San, unless the retirement of B C could keep pace with that retreat, there would appear along the Vistula a bad gap between the two halves of the Russian line, of which the enemy could have taken advantage to break through. It was, therefore, very important that the retirement of the Russian line in Galicia, at the B, or Vistula, end should be slow, and that the rapid falling back should not be permitted until the corresponding line north of the Vistula, in Russian Poland, had had time to prepare its own retirement.

By last Saturday this retirement on the north of the Vistula had been effected. Kielce, apparently, had been evacuated, uncovering the Russian line through Northern Poland, running now rather in the direction E F, and the Russian

retirement upon the San could be effected towards the north as it had already been towards the south. It would seem that by the evening of Sunday last the Russian line, probably reposing upon the Lower San, had reached some such position as E F G upon the above sketch.

Jaroslav, we know, had fallen into the hands of the enemy a day or two before, and while it was not certain how far the Russians might have to fall back north of the Vistula, it was fairly clear that south of that river they would repose upon the Lower San and there make a stand.

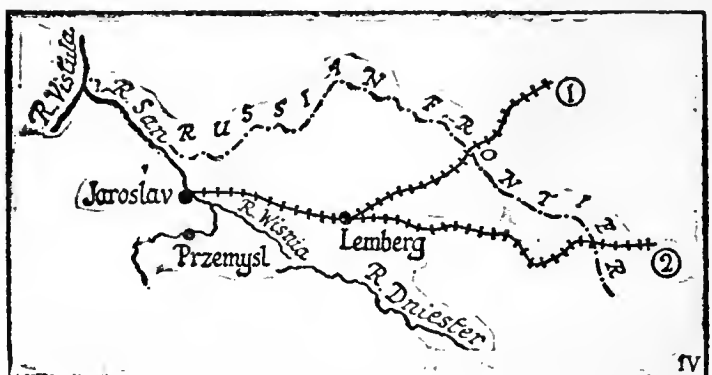
Roughly speaking, they had fallen back in rather less than a fortnight at an average pace of five or six miles a day and at the extreme of their line somewhat faster. They had, presumably, abandoned in wounded and stragglers and a certain proportion of unwounded prisoners, inevitable from such a retreat, well over 100,000 men, and they had lost in one way or another perhaps fifty or sixty field guns. They had at the same time, of course, entirely lost their grip upon the northern Carpathians and the easy passes across those mountains, and their immediate opportunities of invading Hungary with the approach of summer were lost. And all this considerable check to the plans of the Allies we must ascribe to the difficulty the Russians find in equipment, and still more in the munitioning of their artillery, particularly of their heavy guns.

THE LINE OF THE SAN.

We find the Russians, then, at the end of this great retreat, standing upon what they themselves called the line of the San; but here arises an interesting and as yet doubtful point.

Properly speaking, this "Line of the San" is not a line at all. As was pointed out in these notes last week, a prepared position along the Wisloka carried across the narrowest part of the intervening space between that river and the Wislok, and then carried along the Upper Wislok, would have proved a true defensive line reposing upon strong natural features, covering all the Galician positions behind it, and, though compelling a certain withdrawal of the Russian line north of the Vistula, not rendering that withdrawal too pronounced. But the line of the San River fails as a protective screen south of Jaroslav, and can hardly be continued north of the Vistula at all.

To fall back upon the San is to leave quite uncertain the position of Przemyśl, and above that town the positions in the foothills of the Carpa-



thians, for south of Jaroslav the San comes in from the mountains in a great bend westward,

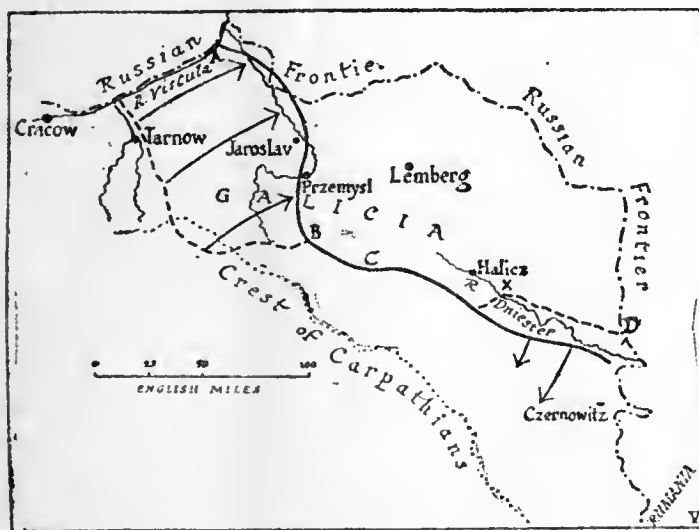
forming a line far too long to be held by the retreating troops and apparently already forced in more than one place.

It is probable that the mere name Przemyśl will have a great effect upon the situation, and that our Allies will be at great pains to prevent the re-entry of the enemy into that town, although it is no longer a fortress. But in so doing they are producing a very dangerous salient in the defensive line, which it is the enemy's whole object to break through.

To put the matter as a mere strategic problem without any considerations of sentiment of any memories of the immediate past: suppose a force, badly hampered for munitions, as is certainly the Russian Army at this moment, and concerned with arresting the advance of an enemy well provided, coming upon it from the west and east across the Galician Plain, what line would such a defensive presumably take up?

Undoubtedly it would take up the line of the San from its junction with the Vistula to somewhere in the neighbourhood of Jaroslav. But not far from that railway junction it would leave the San to follow the Wisznia, and continue the same direction as the Lower San does north-west by south-east on towards the Dniester. It would thus defend Lemberg and the two main lines of railway (1) and (2) leading from the Russian bases; it would concern itself with protecting the advance base of Lemberg; but it would not bother about the pronounced salient of Przemyśl and the big bend of the San westward beyond that point. Our Allies may be able to hold the salient of Przemyśl, or they may not have had time to get away the heavy guns of that fortress. They may have munitions for these guns, but to attempt to hold Przemyśl quite clearly weakens their line as a whole.

All conjecture upon the probable line that will be adopted, whether Przemyśl will be held or no, is the less easy from the fact that the Russian communiqués ever since the beginning of the retreat have been quite insufficient for the formation of opinion. We have had to depend almost entirely upon the statements of the victorious Austro-Hungarians, and these, though



they probably sometimes exaggerate the number of prisoners, are accurate in the statement of places reached and of crossings effected over the various rivers which run parallel one behind the other across the Galician Plain.

THE RUSSIAN COUNTER-OFFENSIVE IN THE EAST.

Meanwhile, upon the extreme left, or eastern, wing of this long Galician Russian front, our Allies were taking the counter-offensive. Their probable object in this I will deal with in a moment. The first thing to appreciate is what the precise movements were.

During the whole ten days of the main retreat of the right wing (A—B in the sketch below) from the Dunajec towards the San, the Russian left wing (C—D) seems to have lain quiescent. But four or five days before the line of the San was reached by the *right* wing (A—B) of the Russian armies in Galicia the *left* wing of the same (C—D) began its counter-offensive, Sunday, May 9, being the first day of this operation.

It is significant that the pressure exercised here took five full days to develop, and presumably means what we noticed upon the right wing—the lack on the Russian side of heavy artillery ammunition. The Russians effected against their enemies to the east of Galicia (and on a smaller scale) in *five* days what the Austro-Germans had effected upon a larger scale in the west of Galicia in *two days and a half*—to wit, the compelling of their adversary to retire from a defensive line long occupied. This defensive line was that of the River Dniester, from the borders of the Russian Empire up, presumably, to a point about



ten or fifteen miles as the crow flies down the river below Halicz. We have no information as to the exact point which the Austrian defensive line along the Dniester reached, but the point marked with a cross on the accompanying sketch is a fair guess, seeing what followed.

We may take it, therefore, that the counter-offensive of the Russians on their left wing struck at an Austrian line which bent round from where the Dniester enters Russian territory, went north at Nadworna, and got into the foothills of the Carpathians about fifteen miles south-east of Stanislaw. Such a line would, with its main sinuosities, be about what the Russians claim it to be—to wit, a front of a hundred miles.

By the 14th the Austrian front, though no more really broken than the Russian front along the Dniester had been a fortnight before, was in full retreat, leaving behind it its wounded and stragglers, exactly as the Russians had left theirs behind during their retreat upon the right wing.

Somewhere about last Friday or Thursday night the rearguards of their retreating columns had reached the left bank of the Pruth, and during the Friday the Russian effort was concentrated upon the crossing of that river. Already, upon the Thursday evening, the bridge-head established at Sniatyn had fallen into the hands of our Ally, and during the Friday the river was crossed, so far as we can discover, in several places.

It will be seen, however, from the above sketch map that the higher reaches of the Pruth, before it becomes a mountain torrent, curl round southward, and the Russian advance, the Austrian retreat parallel to that advance, did not impinge upon the line of the Pruth north-westward of the town of Kolomea. This town remained, as late as last Saturday, in the hands of the Austrians, as also did Czernowitz, lower down; and the line was continued up north-westward in the direction of Nadworna. But Nadworna itself was carried by the Russian advance in the course of last Friday. It will be particularly interesting to see whether that advance can master the railway junction at Delatyn, because if it does our Ally will have blocked the main avenue of retreat across the mountains to their adversaries. No railway crosses the Carpathians southward of this pass, and, as will be seen on the above sketch, the railway junction at Delatyn ends the communication of this pass with the Galician Plain.

Roughly speaking, this counter-offensive has had the effect, in the course of last week, between Sunday morning, the 9th, and Sunday night, the 16th, of forcing the Austrian front back from a line, such as that of the dots in the above diagram, to a line such as that of the crosses immediately to the south of them, and, by the latest advices it would seem that the Russian pursuit is continuing.

As to the scale of the whole operation in comparison to the much larger business towards the

about a sixth of the total forces at work in Galicia. The effect of that counter-offensive, combined with the Russian retreat upon the north, may best be gauged, perhaps, by some such general sketch as the following. It will be seen that the line approximately occupied last Sunday is not a settled one. It fluctuates very considerably, and involved at that moment a dangerous salient round Przemyśl and discussed above. But it will also be seen that as a line it is still intact. The territory lost in this particular retirement by the Russians is marked with horizontal lines—that is, the territory lost since the beginning of May; that regained by them is marked with stippling.

It will be seen how much upon the balance the enemy have gained, but it need hardly be repeated that the final result of such operations is not to be measured in the belt of advance or retirement, but it has two main strategical effects. The first, a lesser effect, the fact that the Austro-Germans have compelled our Ally to lose their hold of the Carpathian passes in the north; the second, a more important point, that they have none the less failed to break the Russian line, and to recover their liberty of manœuvre in the largest sense.

OBJECT OF THIS RUSSIAN COUNTER-OFFENSIVE.

On this point the question will be asked, What object our Ally had in thus assuming the counter-offensive against the Austro-German right and from his own left?

The answer to such a question must, of course, be purely conjectural, and I do no more than put before my readers the conjectures the situation suggests to me.

In the first place, just as the original occupation of the Bukowina by the enemy's forces four or five months ago was largely a political undertaking, aimed at preventing the Roumanian Government from deciding in favour of intervention, so this Russian move back again into the Bukowina may have primarily a political object. Whether there is any chance, proximate or remote, of the Roumanian Government deciding upon intervention is a thing only known to those in authority, and necessarily unknown to the present writer; but it is conceivable that the obvious approach of Italy towards intervention is producing a parallel movement in Roumania, and that in any case the Russian move presupposes the possibility of Roumanian action. That is the first point.

The second and more obvious point, of which there can be no doubt, is that this counter-offensive had the character we always get in any counter-offensive along any line. Finding yourself embarrassed in one sector of your line, you try to relieve the pressure by attacking upon another sector. That is a very simple principle common to all warfare at all times. But it is only just to remark, if we desire to arrive at a sound judgment upon the position in Galicia, that the Russian counter-offensive upon their left has nothing like the same effect in checking embarrassment upon their right and centre that similar strokes at a distance from the threatened point would have in Flanders, for instance, or in the plains of Central Poland.

The Carpathians, as has been frequently described in these columns, rise in height and



north, in which our Allies have been compelled to retreat, it must necessarily be judged by the proportion of prisoners in the two cases, for prisoners mean (in an operation of this kind) mainly the wounded and stragglers abandoned in the retreat, and the proportion to the total numbers engaged would not be very different in the different armies. By this rule the Russian counter-offensive on the extreme left of their Galician line would seem to deal, so far as the enemy was concerned, with

broaden in width and increase in difficulty of communications as one goes from north-west to south-east. If all this were taking place in a flat country, with excellent lateral communications—that is, communications parallel to the Austro-German front—then applying great pressure on to the Bukowina end of the line would no doubt tempt the Austro-Germans to bring round their troops from the north and so relieve the difficulties of the Russian line on the right, communicating upon the San. But these lateral communications are lacking. The troops would have to be brought a long way round by rail from Hungary, along the railway line which follows the Galician foothills of the Carpathians. But this line is not in Austro-German hands, save at its western extremity. For the Russians have the important junction of Stanislas, and possess many other sections of the line further west. Therefore all that the heavy pressure against the Bukowina, now being exercised by the Russians, can do at the best is to compel the withdrawal of the Austro-German troops now occupying that province, and perhaps to draw to the front certain local reserves lurking behind the Bukowina across the passes in Hungary. But it will certainly not have the effect of bringing men and guns down from the north to save the threatened point in the south. The Austro-German effort against the San and against the salient of Przemyśl, and in general the Austro-German attempt to take the whole of north Galicia from the Russians, will hardly be affected by this counter-move in the south.

Thirdly, it may be asked: Does the Russian counter-offensive here presume an attempt to get ultimately into Hungary over the Southern Carpathian passes if the northern Carpathian passes are lost? The answer to this question would seem to be almost certainly, No. The distance is too great and the communications too difficult at the moment for such a stroke to expect success. If, indeed, the Austro-German advance on the north can be checked and thoroughly held, if in the fruitless attempt to prosecute it the enemy were to waste great numbers of men and to emplace more or less permanently great numbers of guns along the San, then by the time considerable bodies of reserves could be equipped, and by the time the artillery could be properly munitioned—which is the great weakness of the Russians—it is conceivable that the new attempt towards Hungary might be made across the higher, broader, and wilder Carpathian country of the south-east, close to the Roumanian border. If the Roumanian Army intervenes, it is obvious that a blow would ultimately be struck in that direction, but for the moment the Russian advance into the Bukowina does not seem to be aiming at crossing the mountains.

THE DARDANELLES.

We have from the Dardanelles news confirming the strength of the Achibaba position, and showing that the enemy still maintains himself along the Achibaba ridge and is continuously resisting the attack delivered by the Allies from beyond Krithia.

On May 6, 7, and 8, the British attacking up the slopes below Krithia on the left, the French

making for the buildings of Halar on the right, failed to carry the ridge.

Meanwhile it may be of interest to the readers of LAND AND WATER to examine the exact configuration of this first main position, the Achibaba Ridge, upon the carrying of which will depend all the first part of the campaign in the Gallipoli Peninsula. On the next page I append a sketch of the contours defining this strong position. The heights of the contours are given in metres, and the probable contour lines (the important ones over 100 metres) are given at 120, 140, and 150 metres above the land. The contours are given at distances of 15 metres from the only two points at which such contours may be shown—to wit, the summits of the ridge of the cliff at the south-eastern end above the Dardanelles.

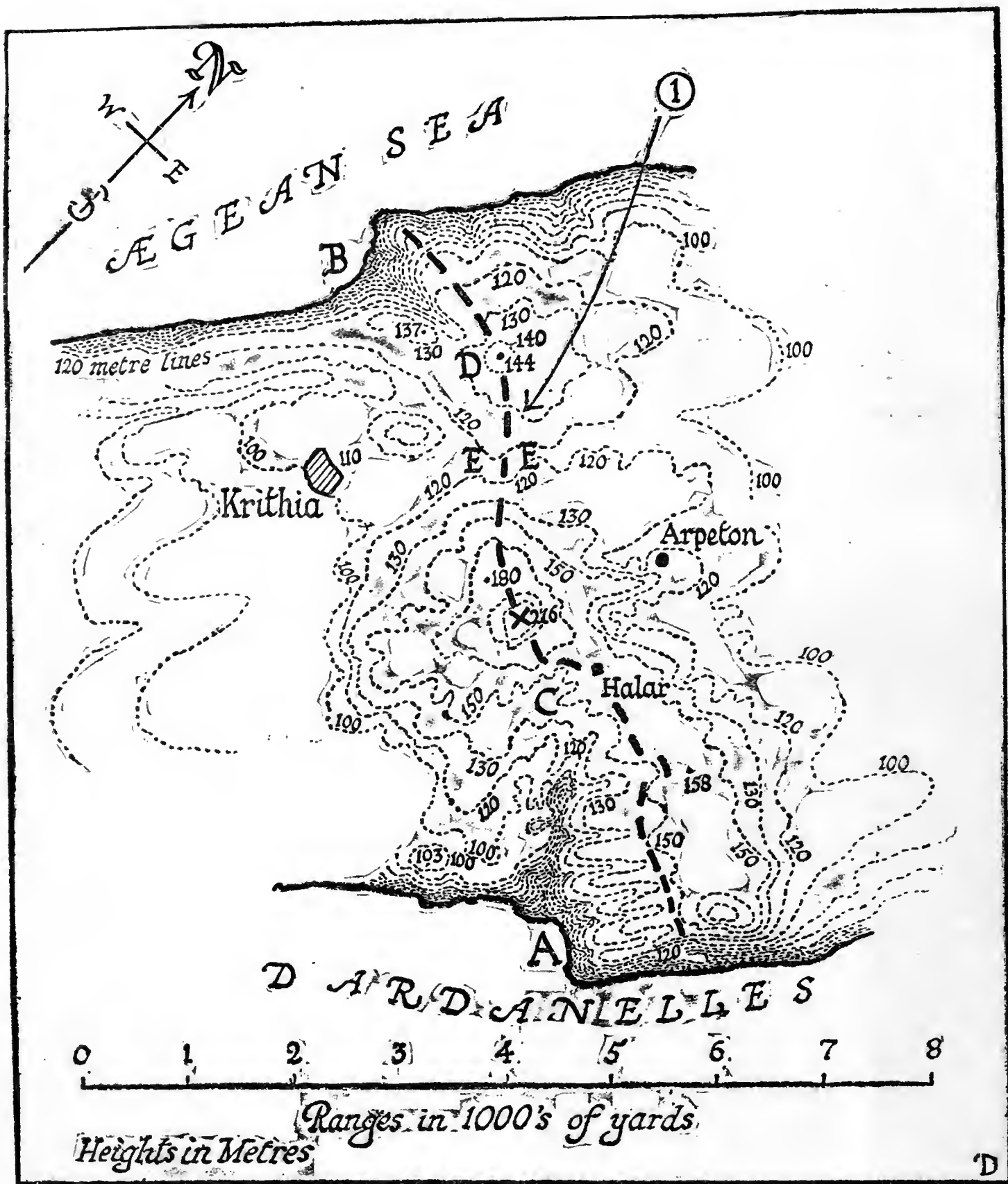
I give the scale in ranges of 1,000 metres, 8,000 metres being approximately five miles.

It will be seen from the above sketch that the position is a very strong one as against attack coming from the south-west—that is, from the direction of Krithia and from the slopes there falling towards the extremity of the peninsula, upon which slopes the main allied force now lies.

The main line of the position, which from the contours would seem to be that which the enemy would occupy (though, of course, all this is only conjecture, for nothing but observation on the spot can tell one exactly where upon the ridge the trenches will be drawn) is indicated on the sketch by the dotted lines. In front of it on the slope nearly as far as Krithia are parallel enemy trenches. Below the ridge is hidden the enemy's artillery.

It will be observed that both ends of this line, the north-western end on the Ægean Sea and the south-eastern end upon the Dardanelles, reposes upon a very precipitous descent towards the sea, while it is further remarkable that the difficulty of turning the extremities of such a line are increased by the presence running inland from the Dardanelles at A and from the Ægean Sea at B of two ravines with precipitous sides, which protect from direct assault any position drawn above them.

The vulnerable part of the line is therefore to be discovered apparently only in its centre. It is true that the extreme steepness of the sides of the ravine at B, and probably also that at A, will create a certain amount of dead ground upon the slopes. That is a ground which cannot be searched by rifle fire from the ridge above the point. A glance at these contours shows that each of these ravines can be searched thoroughly by enfilade fire from that part of the position which lies at the head of each. Thus ravine A is commanded entirely by the spur of the 150 metre contour in front of the buildings at Halar, which spur is seen projecting at the point C, while the ravine at B is similarly commanded by the spur marked D at the north-western end upon the 130 metre contour. In general, and so far as mere observation from the air is of any value in such conjectures, it would seem that the position is not to be taken by force save somewhere in its central portion between D and C, and with regard to that portion it must again be admitted that the opportunities for defence are very great. It is true that the saddle at the lowest point of the ridge, just opposite Krithia, at the point marked E E is low. It is not much more, if any more, than 10 metres,



or 33 feet, above the upper houses of Krithia, and lies only a mile in front of that place. But, on the other hand, this saddle is completely commanded by rocky slopes rising upon either side to north-west, the lesser summit of 144 metres to the south-east, the high summit of Achibaba itself marked by an X and 216 metres above the sea. The whole saddle is commanded at ranges of less



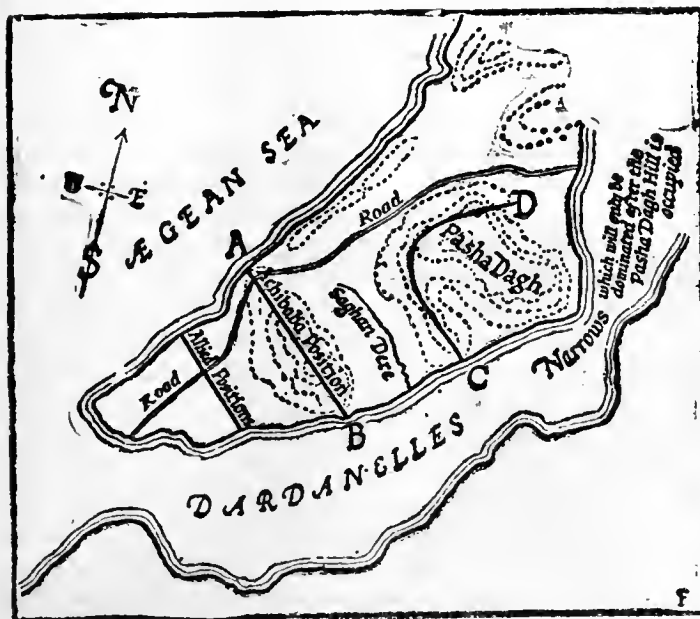
than 2,000 yards from the slopes of these twin hills.

In a word the depression in front of Krithia cannot be used by the assault until the summits commanding it from either side are carried and the Achibaba position will not be in the hands of the Allies until the points D and X have both been seized.

A further matter to note is that the slopes towards the Aegean are so precipitous that, while the plateau, with its culminating ridge along which the position lies, can indeed be shelled in reverse from the sea, yet the ships will have to lie far out to effect their purpose.

While the troops on land are attacking from the Krithia side, the ships will be able to shell the position from the north-eastern side as along the arrow 1, and it is notorious that fire thus

coming in reverse renders any position exceedingly perilous, but this steepness of the fall of the land toward the Ægean renders the fire of the ships one that can only be delivered at very long



range and one that may consequently be less effective. The point will be clear enough from the following diagram.

Supposing the section of the land to be roughly what appears in this diagram, with the lesser peak D at D and the higher Achibaba peak at X, it is clear that, save from quite a long way out at sea, or by the aid of aircraft from above, one could get no view of the falling of the shells: even the slopes of the summit of Achibaba would not be visible save from many miles out into the Ægean, while the ships would also have to stand well out in order that the trajectory of the fire indicated by the dotted lines and arrows should surmount the steep slopes which fall down to the water on this side.

The real opportunities afforded to a fleet can, of course, only be tested by those who have the ground under their own eyes, but a study of the contours makes such conclusions as those I have suggested seem fairly certain.

One may sum up, therefore, and say that a study of the map alone impresses one with the great strength of this position and with the very intense efforts that will have to be made if it is to be forced at all. Once forced, upon the other hand, the retirement of the enemy beyond it over lower ground will expose them to severe punishment. The north-eastern slope of the ridge towards the valley which lies between it and the second position—the escarpment of the Pasha Dagh surrounding the Narrows—is a series of long, easy stretches of falling land entirely exposed to fire from those who may have acquired the summits of the Achibaba ridge. Troops falling back from that ridge across the Soghan Dere—that is, falling back from the position A B on the above sketch to the semi-circular position C D on the escarpments of the Pasha Dagh and covering the Narrows—will, during the first part of their retirement, be completely exposed to fire following them from the ridge they have just abandoned. Save in the neighbourhood of the buildings at Arpeton (see Diagram D), there would seem to be no cover afforded, either by natural features or by

the contours of the ground, though it may be that rocky scars or what not of a sort which the contour map does not show occasionally afford such cover.

It must not be forgotten either that once the ridge is taken it will be under fire from heavy artillery posted on the Pasha Dagh or its neighbourhood, as also under fire at long range from the permanent works and mobile barriers of heavy guns upon the Asiatic coast.

THE PRESENT GERMAN TEMPER.

While it is an error to exaggerate the moral factor represented by the temper of the enemy at any moment, it is well to appreciate what that temper is, for it has its effect upon each phase of the war, and the reader may be recommended to a very excellent summary of that temper which appeared in the *Times* of last Monday. It was there pointed out that German confidence in victory—meaning, presumably, the confidence of the populace, not of those trained to war and able to weigh the international situation—was perhaps higher now than it had been since the winter. The cause of this state of mind is simple enough. It has been produced by the great Austro-German advance in Galicia, and those of us who are wise enough to put ourselves into the shoes of the enemy, and to imagine how we should feel if we read in the course of a fortnight of an advance over something like fifty miles and the presence of our troops at the very gates of a recently-fallen fortress, of great captures of prisoners, and of more moderate but appreciable captures of guns will understand perhaps why uninstructed opinion of the enemy is affected by similar news.

At the same time we shall do well to remember that all those strivings after a moral effect which have distinguished the enemy's action during the last month and more remain fruitful in his eyes. The *Lusitania*, for instance, has been sunk with a certain moral result which, probably, the enemy does not yet appreciate. But the immediate effect has not been to throw into the scale any tangible and measurable weight against him, for expressions of disgust, of horror, or of hatred produced by such acts, as also by the minor existence of the same temper which is to be found in the use of the new poisonous gases, the bombardment of Dunkirk, the attempting to burn English watering-places, and the rest of it, will necessarily seem to those who have approved and supported such conduct only so many tributes to their success. The impartial observer of the campaign, including, of course, the enemy's own General Staff, distinguishes clearly between what is a military and what is not a military action. You would probably find, if you could hear the discussions of the commanders, civil and military, of the enemy armies at this moment, that there was a party, consisting, presumably, of the more soldierly and better read or better travelled men, who doubted the value of such peculiarly civil experiments, just as during the French Revolution the more soldierly-minded amongst those who conducted the State tried to make of the terror an instrument merely of martial law and tried to restrict its expansion into an instrument of torture.

To take the specific instance just quoted, it is probable that quite a number of men, either a

minority or less powerful than the rest amongst those conducting German affairs, see that a crime such as that committed against the *Lusitania*, while it has very little direct military value, indirectly lowers the chances of a successful issue, in so far as purely moral agencies can tend towards that result. But we cannot expect the mass of the German population to follow reasoning of this kind, and we should do well to remember that every new accretion to this pressure of terror upon enemy civilians is supported by the mass of German opinion.

In the same way, not only the most soldierly, but all of those who are occupied in purely military direction upon the side of the enemy, know perfectly well what the retirement of the Russian Army from Galicia means. They set down on the credit side the Russian loss of the passes, the security of Hungary for the moment (and a most important moment it is), and the Russian losses in men and material; but they set on the debit side the failure to break the Russian line, which was necessarily the ultimate object of so considerable an attempt.

They know that Russia is fighting upon two fronts at once, or, if the Eastern front be divided into its two natural sections, then upon three fronts, and that the Austro-German coalition cannot undertake a great offensive with its last reserves of this kind without correspondingly weakening, and ultimately dangerously weakening, the forces in the rest of the field. In other words, every impartial student of the campaign, whether hostile or friendly to the Austro-Germans, recognises that a great expense in men and munitions of this kind is in the long run worse than immobility, unless it succeeds in its main object.

But here, again, you cannot expect the man of uninstructed German opinion to have any such detached and purely intellectual standpoint. We have only to remember how opinion at home is moved by the news of a small advance and depressed by the news of a small retirement to judge the like leakage in this, as in most other affairs of popular emotions during the strain of a war.

What is the practical effect upon our analysis of the operations of this judgment—if it be correct (as I believe it is) that the enemy's civilian opinion is now more confident by far than it was a few weeks ago?

So far as I can judge, the main effect would seem to be this: that this opinion will be prepared for very heavy losses indeed during the heavy fighting that is bound to come with the early summer. It would seem to me to mean that what the French call the "va-tout" upon the part of the enemy, an expenditure of men more lavish than even he has yet attempted, will be the result of the reaction of this civilian temper upon the military commanders. And with regard to this judgment, if it be sound, we may further say, as we have said throughout this campaign, that two alternatives present themselves, the second far more probable than the first.

Either by deliberately incurring a quite abnormal wastage in men the enemy will achieve his main object, which is the piercing of the line containing him to the east or to the west, the recovery of his liberty of manœuvre, and the

defeat upon a large scale of some considerable body of those pierced and turned—a main success which would be followed by the drawn peace at which he is aiming, including the retention (of course) of the Belgian ports: that is the first alternative. Or—the second alternative, and the more probable if we are to judge by the analogy of the whole campaign from the battle of Ypres in October and November to the present day—this vast expenditure of men for which he is preparing opinion at home will fail in its object. If it does so, then it will have precisely the effect which the Allies would most desire. For, at the risk of very tedious repetition, it must again be insisted upon here, as it has been insisted upon so often in these columns, that this siege warfare is ultimately a warfare of wearing down. The enemy deliberately chooses to lose more men in proportion than he can make his opponents lose. He deliberately chooses this expensive policy, enormously more expensive in the West, and probably somewhat more expensive in the East, because he believes that sooner or later it will bear fruit which will make the expense worth while; but with every failure the depletion of his numbers makes it less and less probable that the next attack will succeed, and there is a certain limit after which his losses will, if he does not break the containing lines, produce, as a mere arithmetical certainty, a state of affairs in which he can no longer hold his own lines at their present length.

What will be the effect of all this on neutral intervention and what would happen to the enemy's numbers and to his use of men if Italy should declare war, or, better still, Italy and Roumania between them should declare war?

Without attempting to prophesy, which is manifestly futile, one may suggest a consequence which is almost certain. The arrival of Italy into the field would draw away from the Eastern and Western fronts not less than ten corps. The arrival of Roumania as well into the field would make that ten grow to not less than fifteen.

Let no one imagine that these numbers are to be drawn from some supposed reserves of men already trained which the enemy has not yet thrown into the fighting line. It is the very characteristic of the present situation, it is the very root of the German confidence and of the fury of the Austro-German attack in the East, that the enemy is putting into the fighting line at this moment every atom of fighting power he has at his command.

The intervention of a neutral at this moment would not presumably be felt upon the West, though it would prevent anything more than a very brief attempt at attack towards the West. It would probably be felt upon the Eastern line. For there the insufficiency of Russian equipment and munition presents a better hope of holding the results already acquired with a lesser number of men than those now occupied in pressing forward.

HILAIRE BELLOC.

MR. HILAIRE BELLOC'S WAR LECTURES.

Mr. Belloc's next lecture at Queen's Hall, London, will be on Wednesday, June 2nd. It will be illustrated by coloured slides of the recent fighting and will deal with the present position of the war.

Mr. Belloc's next lecture at the Winter Gardens, Bournemouth, is at 3.30, Tuesday, May 25th.

THE WAR BY WATER.

THE AMERICAN NOTE.

By A. H. POLLEN.

NOTE.—This article has been submitted to the Press Bureau, which does not object to the publication as censored, and takes no responsibility for the correctness of the statements.

SEVERAL events of great naval importance have occurred in the past week. H.M.S. *Goliath* (Captain Shelford) has been torpedoed in the Dardanelles. The British Legation at Athens has offered liberal sums to those who give information of the whereabouts of the German submarines. The Russian Fleet has had an inconclusive engagement with the Turkish Fleet—headed by the *Sultan Janus Selim* (late *Goeben*). It was inconclusive because the Turks retired. But for its ultimate influence on the naval war, President Wilson's Note to Berlin is likely to be the most important of them all.

At the time of writing there is no indication of the sort of reception the German Government has given to this exceedingly explicit document. The Press, however, is in a very unrelenting mood. Nor is there any indication of the course President Wilson will take if that reception proves unfriendly. It may, therefore, appear premature to discuss its possible results; but it does not seem so to me, for Germany must either promise to desist from wholesale sinkings or refuse to desist, and if she refuses, America must either submit to a most outrageous snub or her relations with Germany must cease altogether to be friendly. If they cease to be friendly, those relations must be either those of open war or of passive hostility. In any event, then, the President's Note cannot leave things as it found them, and, for obvious reasons, it is the war at sea that will be most affected by the change.

The real interest of the President's Note is not that it calls upon Germany to cease offending America; it is a definite demand that she shall cease from her crimes against humanity. This is to take a very high line, and seems to create a situation which does not permit of an ambiguous reply. If Germany accepts the reproof, the simplification of the naval position hardly needs to be demonstrated. The Germans cannot, however, be asked to abandon their right to stop contraband in neutral ships or to capture enemy ships. And as submarines are the only craft she has available for either purpose she can only search and capture as far as a submarine crew can do these things. The experiment would be interesting. If loyally attempted, of course, without illegal sinking, a certain success could be possible, but only if the captains respected the fragility of the submarine. Great Britain would have no hesitation, one supposes, in undertaking that merchantmen should not attack them in return for a German promise to abandon the sinking of merchantmen. But the undertaking would have to include sinking after search as well as sinking before search. Is it likely that Germany will invite us to enter into any such bargain? It is more probable that she will reject America's claim to direct her method of conduct. What, then, will America do?

There seems to be a choice of three courses

open. She can break off friendly relations without going to war. This, from a naval point of view, will leave things much as they are, except in one important particular. It is that the Americans will probably take strenuous steps to prevent goods being shipped from the States to Germany through neutral countries. If this were done, the task of patrolling the North Sea and of searching the trade now making for Danish, Swedish, and Norwegian ports would be greatly eased.

It is more probable that public opinion in America will insist upon active hostilities, and if these were confined to naval hostilities the gain to the Allies would be very great indeed. Obviously if an effort were made to raise and equip a military force, industrial resources now devoted to making munitions for us might be deflected to making them for the national army. This would be a development highly deleterious to us, for no American army could be ready in any useful time. Nor would this deflection of munitions be the only disadvantage. The effort would so strain American financial resources as to make it impossible for the European Allies to expect assistance there. But with America at war, but not committed to a land campaign, the Allies who are so committed might, in addition to shells, guns, and rifles, have the benefit of the sympathetic support of the only great neutral money market in the world.

It is, however, to the direct help of the United States Navy that we should look for the most important and the most direct results. The United States Navy is powerful in fighting units of the first class. It possesses no less than ten completed ships of the Dreadnought type. They can bring into battle broadsides amounting to eighty 12-inch guns and twenty 14-inch guns. And the *Oklahoma* and *Nevada* were within ten per cent. of completion on March 1. These two ships would raise the total of the Dreadnoughts to twelve, and add a further twenty 14-inch guns to the broadside. The *Pennsylvania* and the *Arizona* are some way off from completion. Of pre-Dreadnoughts there are five of the *Kansas*, two of the *Louisiana*, and five of the *New Jersey* classes, all laid down in 1904, 1905-6. These constitute twelve ships of reasonable speed and very considerable gun power. There are, indeed, no twelve pre-Dreadnoughts in Europe more heavily armed. With the still earlier types, the three *Maines*, the three *Alabamas*, the *Kearsage* and *Kentucky* and the four old battleships of Mr. Witney's programme we need not concern ourselves. America possesses no battle-cruisers, but there are ten armoured cruisers, five armed with 10-inch and 6-inch, and six armed with 8-inch and 6-inch guns, all nominally capable of twenty-two knots. But these, again, are of no great value except for patrolling purposes. Of fast cruisers America has very few; in point of fact, three only, the

Salem, Birmingham, and Chester. It is more to the point that of destroyers of a modern type—that is, of seven hundred tons and over, and capable of 29 or 30 knots—she has thirty-four completed and a further six that were very near completion on March 1.

This is clearly a very formidable force. It is manifestly impossible for America to employ it in a campaign of her own. If she declares war against Germany, this force must co-operate with the naval forces of the Allies. How should it be used? The prospect opens up a great number of strategical possibilities. For one thing, the junction between the British Grand Fleet and the American battle fleet would put an end once and for all to any likelihood of the German fleet attempting to come out. Slender as the prospect is to-day of the High Seas fleet being able to maintain itself successfully against the King's ships under Sir John Jellicoe, all hopes of doing so would have to be abandoned if it was known that we had been strengthened by a new squadron of such strength as the latest eight American Dreadnoughts would prove to be. If only eight came into the North Sea there would be two more available for the Dardanelles. The pre-Dreadnoughts would be retained as a reserve within home waters, or to reinforce the Allies when wanted. What is perhaps more to the point is the gain to the Allies in the reduced necessity for supervising the merchant ships crossing the Atlantic, and the larger number of ships that would be available for protecting them from submarines. In this matter the American destroyers and three fast cruisers would be of the utmost value. Indeed, there is no reason why the sixteen older boats should not join in protecting the Atlantic traffic. In many respects these fifty-six destroyers would, indeed, be the most valuable reinforcement we could have.

THE WAR IN THE MEDITERRANEAN.

Two pieces of information, to which I have already alluded, from the Mediterranean, have reached us in the course of the past week, which have added considerably to the anxiety with which the public has awaited the sequence of events in the Dardanelles. When H.M.S. *Goliath* (Captain Shelford) was sunk by a torpedo fired from a destroyer on the night of the 12th-13th inst., Captain Shelford, nineteen officers and about 500 men lost their lives—a very grievous blow. The officers and men are irreplaceable. The ship represented perhaps one-twentieth of our naval force in the Straits. The loss gains in significance by the news from Athens. In discussing the perils to which the allied bombarding fleet was exposed, we have generally counted gun-fire, mines—observation, contact, and drifting—and torpedoes fired from tubes submerged by the shore, as the only dangers to be expected. We must now expect active sea attack as well.

Evidently we must not measure the efficiency of the Turkish destroyers by the inefficiency of her bigger ships. The attack of the *Mauvenet-i-Millet* could only have been made at night. It is rather surprising to find that the *Goliath* was covering the French advance in darkness. The difficulty that would be experienced by a ship under way doing anything useful in the way of gunnery, against targets which cannot be seen, must have been very great.

THE SUBMARINE AT THE STRAITS.

The sinking of *Goliath* makes the fact of German submarines having reached the Mediterranean of acute interest. Seven weeks ago, when the sinking of U39 was announced by the Admiralty, I pointed out that these boats had a sufficient fuel capacity to carry them to the Dardanelles and leave them a considerable radius of action when they arrived. It has, indeed, been a mystery to many observers why Germany should be squandering on a perfectly futile form of sea brigandage forces that must be of vital necessity to her elsewhere.

There can be little doubt now that the first of the large submarines was completed for the German fleet in the month of February, and that they have been coming into commission at the rate of two—if not three—every month. With a straight run at fifteen knots—a moderate surface speed—these boats could get from Zeebrugge to the Dardanelles in about ten days' time. If allowance is made for periodical submersions to avoid attack, the journey might occupy three weeks. By this time, had all the new submarines been sent to the Mediterranean, half a dozen might be there.

There would, of course, be serious difficulties in getting very valuable results out of them. The only well-equipped naval base available would be Pola, and from Pola to the Straits is nearly twelve hundred miles. The alternative to such a base would be an arrangement by which apparently neutral supply ships were provided somewhere in the Greek Archipelago. But it does not seem safe to assume that neither Smyrna nor any other seaboard Turkish town in Asia Minor could be used. No doubt Sir Richard Pierce's squadron will keep the sharpest possible kind of look-out. But German submarines have been able to evade the British patrols and destroyers that infest the Channel, so that however close the investment of Smyrna may be from the sea, the difficulties in the way of submarines using this, or some other Turkish town, should not be insuperable.

At any rate, the threat is a formidable one. One has only to read Mr. Ashmead-Bartlett's last despatch to realise what a target our transports must afford. The threat emphasises what perhaps hardly needs emphasis—the truth that every delay in bringing these operations to a successful issue makes success more difficult and more hazardous to the forces engaged.

THE PROTECTION OF THE SHIPS.

It brings home to us also the crucial necessity for the protection of the bombarding fleet. When, on March 18, *Irresistible*, *Ocean*, and *Bouvet* were sunk by drifting mines, the Admiralty made the somewhat *naïf* statement that immediate steps would be taken to protect the ships in future; so that we were driven to ask whether this particular danger was unforeseen. As a fact, there are few subjects about which naval opinion has chopped and changed so curiously as on the question of net defence. When the first official trials of the Luppis-Whitehead torpedo in British waters were made, experiments with nets to protect ships from them formed an integral part of the practical investigations carried out. As a consequence, from the earliest date of the adoption of the torpedo, stout nets were carried on all armoured

ships to protect them when lying at anchor or going dead slow. But nets were not a complete defence, even in these conditions, and were quite useless with the ship going faster than three or four knots. Moreover, the nets, the booms, and the apparatus for raising and lowering the nets were a great weight. There were, in addition, many other reasons for finding them a serious nuisance in a ship. Ten years ago the opinion had gained that they might be discarded. The Whitehead torpedo had done practically nothing in the Spanish-American War, nor in the war between China and Japan, and by 1905 naval opinion was practically agreed on giving up nets altogether. The sensational opening of the Russo-Japanese War caused a complete revulsion—once more nets were treated as absolutely necessary for the equipment of a ship.

But in 1908 and 1909 the high-speed, long-range torpedo came into use. This put a completely new aspect on things. At short range a torpedo going fifty knots can cut its way through any net, so that against the latest weapon, fired at short range, the net was no protection at all, even in the limited conditions in which it had been such with the older and slower weapon. But this is by no means the only reason why nets fell into disrepute. With a long-range weapon, it seemed clear that the torpedo was destined to play

a great part in fleet actions, and in fleet actions with ships under way nets of course could not be used. The necessity of protecting fleets at anchor was forgotten in the larger question. The old nets might be useless against the new torpedo; but no new method of defence was worked out.

Had it ever been contemplated to employ the pre-Dreadnought battle fleet as it is now being employed in the Straits, we may be sure that every net would have been replaced. That they were not replaced is perhaps a measure of the extreme haste with which these ships had to be sent upon their new duties. The lesson of the omission must have come home with great force after the events of March 18, and no doubt nets and booms have long since been sent to make good the deficiencies that may have existed. In the case of *Goliath* it is not at all certain that nets could have defended her. In the Dardanelles current it would have been almost impossible to have kept them in place even with the ship stationary over the ground.

It is not to be supposed that re-netting the ship is the only precaution that ought or has been taken to protect the fleet from drifting mines or from torpedoes, either from the shore stations and destroyers or submarines. Provision must certainly have been made for more active measures.

THE LIMITATIONS OF INTERNATIONAL LAW.

By COLONEL F. N. MAUDE, C.B.

FOR the past forty years at least all soldiers who have made a serious study of their profession have been warning the members of the various Peace Societies of the dangers and difficulties they were creating for this country by endeavouring to codify certain customs which had grown up during centuries of warfare and to confer upon this codex the status of "International Law."

The position in which we were placed by the various Hague Conventions, at which these new laws were accepted, was a most difficult one, because from the nature of our duties as an ancient Colonial Empire we had to be prepared to fight all varieties of races, often under conditions of such extreme danger and responsibility for other lives and greater interests that it was futile to prescribe or limit in any way any use which the men on the spot might make of the resources at their command.

For example, if a British steamer carrying many white women and children (a mission expedition, let us say) were beset by Chinese pirates, would the missionary in charge object to the captain's turning the steam hose on to their assailants and beating them off with superheated steam, when the ship might be unprovided with any other adequate means of dealing with the situation? Such steam produces results many times worse than asphyxiation, and death from its injuries is quite as painful as that of chlorine vapour; but, judging from the outrages committed by German officers on English schoolgirls and Belgian nuns, the fate of white women falling into Chinese hands could be no worse, for nothing this side of hell could be more terrible than the German atrocities, no crime more deserving of such drastic punishment.

Again, an officer holding an outpost of vital importance against the rush of hordes of "Fuzzies" could not be blamed for using fire-smoke, dum-dum bullets, or any other means at his command in order to prolong resistance and gain time for the troops he is covering to concentrate; and, by the way,

blaming the officers would not prevent their men selling their lives as dearly as it was possible for them to do.

The framers of this code, of course, recognised these cases of supreme necessity by limiting its application to "civilised" nations only; and in so doing provided opportunities for the revolting outrages we are now witnessing; for, though every thoughtful soldier realised that when fighting with their backs to the wall all races instinctively shed their civilisation, the nation as a whole declined to believe in the realities of warfare, and, in spite of the experiences of the Napoleonic wars, failed to perceive the loopholes which The Hague attempt at legislation provided for the advantage of an unscrupulous enemy.

The result has been a series of very unpleasant surprises for the navies and troops equipped only for the prosecution of civilised warfare, of which the recent use of poisonous, not merely asphyxiating, fumes is far the worst and most cruel.

The use of all kinds of gaseous fumes and of other poisons has been studied for years and years, and almost all have their antidotes and can be guarded against, provided the possibility of encountering them is admitted. Speaking generally, however, military commonsense, quite apart from human consideration, has rejected such things as far less effective than the means which can be provided of equal local efficiency and more general application.

But since all parties in the present war had signed a declaration binding them to refrain from the employment of the before-mentioned and similar means, such as squirting burning petrol, &c., the Germans promptly took advantage of the opportunity afforded them by their knowledge of our reputation for adhering to our given word, and, with the absolute unscrupulousness and lack of truth on which they pride themselves, proceeded to score here and there temporary successes.

Had they believed that we were prepared with the same appliances the chances are millions to one that they would not have employed any such expedients, for when the advan-

tage of surprise does not exist the means which experience has shown to be most effective in the long run would only have been used by all combatants.

In fighting day by day, a ton of high explosive divided amongst many shells and discharged from mobile weapons will do far more damage than a ton of chlorine, and takes far less haulage and trouble generally than will the appliances needed to discharge the gas; hence, beyond certain limited surprises, the Germans have gained but little in the theatre of war and have lost incomparably more outside it—namely, the last rags of consideration which their first outrages and crimes might have left them to cover the disfigured and naked body of their race. They have forgotten the dictum of Clausewitz, that the use of absolute force in war must be tempered by expediency; in other words, that it does not pay to outrage the general sense of decency and the feelings of the human race by methods more ruthless and cruel than those sanctioned by custom.

And, further, they have done this at the most inopportune moment for their own cause. The resentment aroused by their atrocities in Belgium was beginning to die down, and in the general feeling of war-weariness it was in danger of being forgotten. It is more than possible that the sympathy of all neutrals (including, of course, the United States) might have been against the Allies in their determination to exact terms of peace that shall ensure the root destruction of Prussian militarism. But the sinking of the *Lusitania* has opened the half-blind eyes of some parts of the world to what a renewal of war with Germany, following on a period of armed truce, would mean to all on whom she could lay her hands, and I doubt whether at the present moment there is a neutral Power in existence which will have even a word of sympathy for Germany's inevitable punishment when the end arrives.

Fortunately the conduct of her sea pirates has shown us the practical way to attain our purpose in a manner that will enlist the sympathies of all neutral peoples.

It was easy to talk of destroying "Prussian militarism," but, as the attempts of Napoleon after Jena proved most conclusively, it was by no means easy to suggest a practical method of doing so.

But it will be well for all countries to remember that the German Army can never again be formidable without it has sea power behind it.

The present war has proved this up to the hilt.

Once normal conditions have been restored the Socialist Party in Germany will be quite strong enough to prevent any expenditure on a War Navy unless it can be shown that such a fleet serves some other purpose than that of supporting aggression. When it had, at the beginning of its existence, the plausible excuse of protecting its ocean-going commerce, it possessed a motive strong enough to capture both commercial and labour votes.

If we in the future rigidly prohibit any German-owned vessel flying the German merchant flag from entering any port in the civilised world (even in those of the British Empire would suffice), then the argument of "commerce protection" would at once cease to exist, and consequently money would be lacking for a War Navy.

Such prohibition would not inflict any injury on legitimate German trade (her merchant navy, of course, excepted), for it is all the same to the inland merchant who transports his goods over-seas, provided that freightage is reasonable, and the competition for the carrying trade between British, Norwegian, Swedish, Danish, and Russian ships, &c., would suffice to keep that down to about its proper level.

Incidentally, it would give back to the neutral nations their share in that trade which the German subsidised liners had taken away from them.

Deprived of her fleets, Germany would then be in much the same position as Switzerland. No one would threaten her, for no one covets one acre of her legitimate possessions, and since, shorn of her weapons of aggression, she could not threaten in her turn, no matter how large her Army might be, and the peace of Central Europe would be secured for very many generations by this device.

THE DANGEROUS TALK OF PEACE.

By FREDERICK GRUNDY.

WHY not discuss the terms of peace? Such were the words that appeared over a long article by a distinguished writer a short time ago. No more depressing thought could well occur than such a discussion at such a moment as this.

After nine months of warfare on a scale hitherto unimagined, in which the units engaged are not mere armies, but nations in arms, and those the greatest nations of Europe; when for three parts of a year such countries of Europe as have not already been drawn into the bloody vortex have been shuddering on its brink; when an entire kingdom has been laid waste and those of its civil population who are not refugees in foreign lands are dependent for their scant daily bread upon the charity of strangers; when five-sixths of Poland is in even a more pitiable and desperate condition, after waging a warfare which, in the words of that great patriot Paderewski, has been "Paricide, Fratricide, and compulsory Suicide"; when for month after month the ears of the world have been insulted and stunned by stories of inhuman cruelty and bestial lust, incredible but for the overwhelming evidence of their truth; when the killed, the wounded, and the captured are already numbered by the million—when these and a hundred other things are considered, it may seem strange to find anything depressing in the thought of peace.

As a fact, there is much that is depressing, even alarming, in the way in which the idea of peace is being put forward at the present moment. The danger is not lessened but rather increased by the fact that at the moment the majority perhaps of the British people will say, "We are not thinking of peace, and will not think of it until the Allied Armies have achieved complete victory and the Allied Nations can impose fitting terms. Besides that, we are being warned with increasing insistency of late in the daily Press not to be deceived by the

rosy optimism which pervades the official reports. We are told that 'the changes of line in the last six months would hardly be noticed by a map-maker,' and see the Government being urged 'to use every effort to make the nation understand how small is the progress yet attained on land, and how great and manifold are the sacrifices which must be faced.' If this be true, is it likely that Germany, any more than ourselves, will be willing to listen to peace talk yet awhile?"

This is not difficult to answer. It is some little time ago now that "the directing mind" of Germany, as Mr. Belloe has well called it, had been forced to the point of admitting, "We are prepared to meet a reasonable demand upon us and to discuss terms."

It must not be thought that the recent unspeakable conduct of the Germans, both on land and sea, betokens any idea on their part—or, rather, on the part of the "directing minds"—that they will ultimately secure complete victory over the Allies by the steady pursuit of their policy of "frightfulness." The murder of harmless fishermen, asphyxiating gases, and the torpedoing of peaceful liners differ nothing in manner or degree from the horrors of Belgium and Poland. If after the latter Germany saw some hope of success in approaching Europe and the neutral countries with what amounted to a request for "a draw," it is not likely that she will be deterred from that object because in the meantime she has committed fresh atrocities.

Indeed, when we consider the strange ramifications and perverted logic of the German mind, the very opposite is more likely to be the case. "If all these atrocities have not made it impossible, but only rather difficult, to float the idea of a draw," such a mind would argue, "then let us try others." This, surely, is the basic idea of the German policy of "frightfulness."

It is this idea of "a draw," or even something slightly

better for the Allies, "a win on points," that is so distressing in the recent talk of peace. For the moment it has, perhaps, been suppressed. But it has not been killed, and nothing could be more dangerous—or, rather, fatal—to the future peace and welfare of Europe in general and this country in particular. This should be abundantly evident to all clear-thinking minds. "A win on points" is invariably followed by another contest when the loser has been "readied" again.

It may be argued that the ways of the prize-ring are not those of the great nations of the world. There are already many, and presently their numbers will be increased, who place their confidence in the show of "sweet reasonableness" that has of late marked the propagandist work of Count Bernstorff and Herr Dernburg in America, and similar efforts by means of numerous articles and interviews now to be found in the German Press. These, perhaps sincere, but certainly misguided, people profess to believe that a peace made in the immediate future would be a good, a just, and lasting peace, and will stigmatise as brutal and uncivilised any wish to beat to its knees a foe that is "prepared to meet a reasonable demand."

Before saying anything of the danger that undoubtedly exists of these sentimentalist and opportunist views spreading and increasing in power until they may actually threaten to rob the Allies, and indeed the whole civilised world, of the reward they should gain for the vast sacrifices they have made, and have yet to make, in this war, let us consider just one great and unanswerable reason against even listening to any talk of peace until Germany has been decisively and completely beaten. There are many arguments against a premature peace, and all of them should be strongly impressed upon the minds of the public, but in this article it is only proposed to deal with one. It can be done in very few words.

It is no longer necessary to spend time in pointing out how this war was long prepared by the Prussian militarist party, and how plainly a few years ago the very year, even the very month, for its outbreak was decided upon. Nor is it necessary to dilate upon the fact that the German Empire is working and fighting as one man with the Prussian militarists. The prophets who foretold that the Saxons or the Bavarians would soon tire of sacrificing their blood and treasure for Prussia have been falsified. Those who put their faith in the German Socialists, even by revolution, putting an end to the war unless victory were rapid and complete, have been deceived. There is not the slightest sign at present of any breaking away from the Prussian dominance, nor is there any sign even that if, for their own ends, the "directing" military minds of Prussia can now secure an inconclusive peace the German nation as a whole, or any parts of it, would rise against the men who have cheated them with false hopes and hurl them from power. Everything, indeed, points to the contrary and suggests that Germany would be as acquiescent in such a conclusion to the war as it has been in everything else offered to it by its "directing minds."

And here lies the greatest danger of a premature peace. It is this which affords the most depressing thought when one turns the mind towards the end of the war. So long as Germany is content to submit to the domination of the Prussian militarists, so long as she continues to suffer her present form of government, the peace of Europe cannot be reasonably assured. No matter what terms of peace the Allies may eventually be able to impose, one thing they cannot do. It is impossible to impose upon a nation its form of government. This can be done with conquered and inferior nations as we have done it in the case of various coloured races. It can be done with a conquered and vassal nation as Germany, Austria, and Russia have done it in the case of Poland. But it would surely be impossible in the case of Germany. Yet if after peace has been made Germany remains, as she is now, a military autocracy, that peace will be but a truce, a long one perhaps, but still a truce. The only cure for this is some democratic form of government for Germany. A democracy can never prepare a war in the sense that Germany has prepared this war. A democracy will fight, as this country and France are fighting now, but it can never prepare for long years and then say "In such and such a year we shall be ready," and when that year comes draw the sword. There is not, and cannot be, in a democracy sufficient continuity of policy or administration for such an undertaking. Even continuity in the policy of necessary preparation for defence is for a democracy a difficult matter to secure, as we have just seen both at home and in France. But with a military autocracy such as Germany's it is perfectly easy. Her Parliament is merely a glorified debating society upon which the "directing minds" can impose their will, and, while maintaining their continuous war policy, can keep the bulk of the people contented by not neglecting the country's trade and commerce

and material welfare generally, as certainly they have not been neglected by Germany's autocrats.

How, then, can a reformed system of government be secured for Germany? The only way seems to be by inflicting such a defeat upon her as will make the German people realise into what evils a military autocracy must plunge them at constantly recurring intervals. Then they may themselves be stirred to effect a change. But this will certainly not be done while Germany is still waging war entirely upon the territory of her enemies. Not until the Fatherland itself is threatened is the German people likely to realise the truth.

Here, then, is one compelling reason which, whatever sacrifices it may entail, makes the crushing defeat of Germany a stern necessity and no mere act of vindictiveness.

But is there any real danger of this premature and inconclusive peace? At present, it may be urged, all talk of it is confined to America. Our own weak ones—even Mr. Shaw—seem to have been silenced. They may be silent, but, unhappily, they still exist. There is, undoubtedly, a real danger. At a certain point in a great war neutral pressure has often helped to bring about what has been repugnant to one of the belligerents. The termination of the Russo-Japanese War is considered by many to have been such a case. This neutral pressure may, indeed, need something to work upon. Can we be sure that it will not be found in our own country?

A chain is only as strong as its weakest link, and at present the Allies have not experienced the maximum strain that will be put upon them if this war is to be pushed to the bitter and necessary finish. Especially is this true of ourselves. There are no very obvious signs here as yet of the pinch of war. One sees little evidence of reduction in luxury or other enforced sacrifices caused by the war. Those who are suffering most, as yet, belong to the class that always suffers in silence as long as they suffer alone, but they are liable to add the weight of their influence to that of other sufferers who are not so patient of the pinch when it comes. "War money" is plentiful to-day with the working classes, and the well-to-do are not yet really hurt. But a people cannot spend £700,000,000 per annum on war without feeling the pinch, and feeling it very severely, sooner or later. Many as have already been killed and wounded, we have not yet suffered our severest losses in the field. It is foolish, therefore, to close one's eyes to the danger that the time may come when more and more will be inclined to listen to the voice of the tempter saying "You can put an end to it now." It is not too early to look forward to such a possibility. If the Allies weaken in their present strong resolve, then all their sacrifices will have been in vain. This country must not prove the weak link in the chain, must not even show the slightest sign of bending, for even that might entail ruin. If, then, merely the appearance of readiness to sheathe our sword before our task is fully completed be a danger, as surely it will be, then to guard against it is only simple commonsense. This can best be done by keeping constantly before the minds of the people the unanswerable reasons for fighting on until our enemies are not only reduced but reformed.

Owing to the exceptional importance of recent military events—which are fully analysed in this issue of LAND AND WATER, it has been found impossible, although extra pages have been added, to include all our usual features. Consequently the continuation of Mr. L. B. Desbled's articles on "The War by Air," and Mr. Douglas English's "Tales of the Untamed," will appear in our next issue.—EDITOR.

OUR FRONTISPIECE.

Copies on Art Paper of the series of War Portraits, specially drawn for LAND AND WATER by Joseph Simpson, R.B.A., may be had, price 2s. 6d. each, on application to the Publisher, LAND AND WATER, Central House, Kingsway, London, W.C.

Previous portraits, General Joffre, General Foch.

This week's, General Rennenkampf.

THE HAPPY WARRIORS.

By J. D. SYMON.

IN this war of surprises, itself so great a surprise to the unready majority, the private soldier has come into his own in a way that not even his growing recognition during the South African War seemed to foretell. It is little more than twenty years since Kipling could write with bitter irony:

"It's 'Tommy this' and 'Tommy that' and 'Tommy, go away';

But it's 'Thank you, Mister Atkins,' when the band begins to play."

And the balladist went on, not without truth, to enlarge upon the private's unacceptability in public places, which he summed up in the ugly phrase, "Chuck him out, the brute!" That scorn of the common soldier was a legacy from the bad old days of the Press Gang. Our grandfathers and great-grandfathers, in spite of their debt to the fighting man, thought no shame of their dismal old saying that the rank and file of the Army was the "off-scourings of the earth." The feeling lingered on through piping times of peace, until the author of "Soldiers Three" and the "Barrack Room Ballads" pulled us up sharp and showed us in Learoyd, Ortheris, and Mulvaney, the modern Porthos, Athos, and D'Artagnan (the exquisite Aramis has no counterpart here), the gold that we were trampling under foot. The movement was distinct from the outset. Almost as soon as the new point of view had been indicated a song in one of the earliest of the musical comedies ran riot through the country. Every barrel-organ and every whistling errand-boy united in the praise of "Tommy, Tommy Atkins." It was a poor thing of a song, jejune and spasmodic, not to be compared for a moment to the verse that inspired its sentiment; but it did its work, and before its Cockney accents, verbal and musical (for there is a Cockney accent in music as well as in words), had been quite forgotten, South Africa went ablaze, and the public shouldered for the first time with real purpose and conviction its duty to the soldier in the field. In the Crimea, it is true, after many scandalous initial blunders, a great work had been accomplished; but the soldier of the 'fifties was still, in the popular view, a fellow who risked his none too valuable life for sixpence a day. It was his job, like any other man's, and there the matter ended. No man cared overmuch for the soldier's soul or took the trouble to realise that he had one. And his body did not cause much concern until it had been wounded.

To-day we have changed all that; and the change has reacted with the happiest results upon the soldier himself. He has always been a cheerful being, even in the times when he had least encouragement he was a mad wag, but his present light-heartedness is a finer thing. He showed it from the first moment of his landing, when his daft, inconsequential, and quite unwarlike ditty about an Irishman adrift in London won the heart of La Belle France and atoned to her for the loss of the expected red-coat. Since then a new development of the happy warrior has risen into view, an amiable by-product of the altered personnel of our new armies. A phrase, old as the times of Gustavus Adolphus, has come back to its own. We forget that the word "private" is an abbreviation. It has become almost a noun. Historically, it is an adjective, and its originally attendant noun is full of meaning for us to-day. No; it is not "soldier," as the majority suppose. Let us hear what that doughty free-lance and former follower of Gustavus, Captain Dugald Dalgetty, has to say on the subject: "My lord, I found myself trailing a pike as a private gentleman under old Sir Ludovick Leslie, where I learned the rules of service so tightly that I will not forget them in a hurry." And again, "Sir, I was six years first private gentleman of the company and three years lance-speisade." Promotion came "dooms slow" to Dalgetty, partly because the "private gentleman" had nice ideas of his own dignity and "disdained to receive a halberd."

This by the way. Our present point is the originally honourable position of the rank and file and the wonderful return to that gentlemanly ideal in the bearing and character of the men who have flocked, in what numbers we are not told, to answer Lord Kitchener's call. They are the blithest lads that you could meet on a spring holiday, if a Wordsworthian parody be permissible; happy warriors, indeed, and

in their chance intercourse with the civilian world most gentle and courteous comrades of the way. There is no better tonic than an hour, or hours, for choice, spent with them in the railway carriage. Fun, as refreshing as it is clean, goes rollicking from side to side, and their laughter, that revealing thing, is heart-whole and wholesome. The diverse elements that go to the composition of the new forces have produced a curious amalgam. The man of little education and the man of much education act and react on one another with the happiest results and often with unexpected effect. The talk that ranges over pay and accoutrements, the peculiarities of comrades and of the powers that be, sometimes takes a higher flight, and one is reminded of that young Scottish sailor, a brother of Robert Ferguson, the poet, who discussed with so much knowledge and insight technical questions of verse-making. Only the other evening, in the last train, I fell among artillerymen returning in force after a few hours' leave to the pretty village of which they are at present the everlasting wonder and delight. They were all delightfully young, full of "push and go" enough to satisfy even the Chancellor himself, alive to every passing humour, and still schoolboys at heart. Every type was there—the ex-clerk, the Board school boy, the public school boy, the man who had gone further than the public school before his release from tutors and governors. At first the talk was professionally critical, of careless driving on somebody's part and an overturned limber, wherein lurked jokes hidden from the layman; there was sport, too, of some non-com. whose speciality, amounting to a craze, was extra stable orderlies.

But the plum of the talk came with a reference to the battery's tame poet. Whether the bard was of the company one could not discover. If he were, he restrained his blushes nobly. He had reason to blush. Hearty admiration of his powers did not prevent ruthless quotation for the ears of all, and sundry of his priceless lines. As a lampoonist he seemed to shine. Most of his couplets were strictly personal and carried a sting in their tail, but they were never coarse or ill-natured. The rhymes to difficult names clicked ingeniously. If not always perfect, they were at least adequate to the purpose and so far promising of immortality that they seemed to bear endless repetition. But the short epigram, it appeared, did not exhaust the powers of genius. The corporal in the corner had recently caught the *sacer vates* in the awful act of composition. In less than no time the poet had slung off something of almost epic dimensions. "And jolly good verse it is, too; not a bit broken in the what d'ye call it?" "The rhythm," interposed a gunner with the indefinable hall-mark of the university upon him. "Yes, the rhythm; that's the bally thing I mean. It just *streams* from him!"—"As fast as he can put it down!" said another voice. And therewith they praised their famous man once more and bandied his glowing lines about until their station came past the window and it was time to say good-night. Singing, they left the station, and so to billets and to bed. Envious fellows! If the young shirkers knew what they are missing they would be with you to-day. The songs may have nothing to do with war; perhaps our happy warriors themselves do not consciously realise why it is that they cannot keep from singing at every "march at ease." But it is the light-heartedness of men who have found a work lying to their hand and are doing it with their might. Equally determined are those over-age men who fill the ranks of the volunteer training corps. They have not the younger men's blessed sense of certain usefulness, but, on the chance, they mean to be ready in their limited way. And the greybeards, too, count kin with the happy warriors and have still a good song left in them to cheer the route march. But it is the day of the young men, and such young men! Already the enemy knows that the tale of guttersnipe recruits is a lie. We have got the very best. Salute them as they go singing by. The toll is fearful and will be heavier still, but they do not think of that, for they are, as never before in our history, "gentlemen unafraid." These notes began with Kipling; with Kipling, it seems, they are to end. Again a phrase of his, taken from a different context, has supplied just the right description for our happy warriors from the highest to those who trail the rifle as "private gentlemen."

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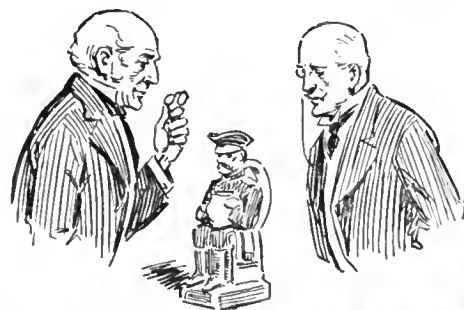
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F E M I N A

WHAT CAN I DO NEXT?

By MRS. ERIC DE RIDDER

"BILLETING is over here," ran my letter, "but I feel I cannot sit at home doing nothing but read the horrors in the papers; what can I do next?" The writer of the letter is one of the busiest women in the world, with a large family, and many household cares. These have been intensified during the past few months by the introduction of a great number of troops into the neighbouring district. Four officers have been billeted in the house, and twenty-four non-commissioned officers and men billeted elsewhere on the estate. As the house and its surroundings are many miles from a railway station and shops, and in the heart of a country district, this incursion was none too easy to deal with. It meant much thought and preparation on the part of the owners, and quite a considerable amount of work in one way or another.

Now this is all over, the troops have gone, and nobody so far has taken their place. And the sole wish of those left behind is to get busy over something else. It is felt that inaction—even the comparative inaction that is all ever falling to my friend's lot—is unbearable. The great need is to be up and doing. Anything that is useful, anything that is needed, anything that will serve to keep the mind from dwelling on horrors that sadden it inexpressibly. This wish for occupation is a feeling that is growing with every day that passes. Strong though it is already, there is no doubt but that it must grow stronger with the passing of time. Numbers of women in every rank of life have this common desire. It is one of which those in authority might surely take a fuller advantage than they are at present doing. But the ways of such are apt to be passing strange.

A Form to Fill

Not so very long ago, every woman in the country who wanted occupation was invited by the Government to register her name at the nearest Labour Exchange. Forms of application were prepared, each containing the customary categorical catechism, and to await the applicants was all that remained. Whether the Labour Exchanges are not the popular resorts they possibly ought to be, whether the scheme was not published widely enough, has yet to be divulged. In any case, the response, from all accounts, is not an overwhelming one, and by no manner of means in proportion to the great number of women living in these islands.

I am told by those who ought to know that this idea was designed for women in general, not for any one class in particular. The object was to make a register of available women who could be called upon, whenever it was necessary, to release men for active service by taking their place. The principle of this is such an excellent one that it can only be hoped it will be pushed to its far limits, with much more energy than has heretofore been the case. Judging from the Government application form, it would seem that women and agriculture are more closely linked together in the official mind than anything else. Touching though they do upon leather-stitching, brush-making, clothing-machining, and light machining for armament, it is with regard to agricultural work that a special set of questions is framed. Women in France, and those in Germany also, started to work on the land in place of men, almost the first day war was declared. Here, though one or two wholly praiseworthy experiments have been made, there is no such definite movement. And

yet the women of this country are more than willing—are even anxious to serve their land in some tangible fashion. Not by tilling the land alone, but in scores of other ways. Full use is not made of this great depth of purpose. There is a hitch somewhere, a hitch that badly wants finding, and remedying without loss of time.

Women and War Service

Just before Christmas of last year it was decided to obtain a return of all the men still remaining who were eligible for active service.

This was done by the means of forms, which were distributed at the door of every householder with a polite request that it might be filled up at his early convenience. If those in seats of authority really desire the services, on a large scale, of women, they might reasonably go to a like amount of trouble to gain the necessary information; it would save the walk to the nearest Labour Exchange, which is surely an aggravation of circumstance. Personally, I have never been within the sacred portals of such an institution, but I would infinitely sooner struggle with the intricacies of an official form within my own domicile than beneath the glassy eye of aloof officialdom. It may of course be an error of taste, but it, I believe, is a feeling shared by many. Safely seated at one's own writing desk, personal possibilities would unfold in an astonishing way, and the form be returned full of information upon which the Government could draw. There can really be no reason why the women of this country should not be circularised as well as the



Copyright Rita Martin

LADY MICHELHAM

Who has been nursing wounded soldiers in the South of France, and together with her husband has presented a luxurious ambulance train for the use of the Allies

men. If they were, there can be no doubt it would call forth an astonishingly strong response.

One Side of the Question

A number of well-known women have signed their names to a letter which has just appeared in the Press on the subject of soldiers who do women's work. Taking for granted that the main object at the present time is to raise every man available for active service, they comment upon the fact that military clerks are being occupied in Flanders, as well as in England, upon work which women could do equally well. There is also a suggestion that women should be employed as hospital orderlies instead of men, thereby liberating many active youths who are now fulfilling this part. Women are acting as orderlies in the hospital units which the Scottish women have sent to France and Serbia, and the work, it is claimed, has been perfectly carried out, hard and arduous though it often is.

There are heaps of men doing other forms of women's work in England to-day. In times such as these, it surely does not take a stalwart young man, six foot in his socks, to sell manicure cases, or dilate upon the latest thing in neckwear. He can undoubtedly be more profitably employed elsewhere. If the whole country, men and women alike, could be formed into one great business organisation with the crushing of this German menace as its sole aim and object, it would move forward the halcyon days of peace by leaps and bounds. Since it is man's business to go and fight, it is equally woman's business to perform the tasks he leaves behind. Few women will be found who dispute this corollary, but it remains that their services have yet been barely requisitioned. Signs are not lacking that this omission will have to be remedied before much more water has run under the bridge, and the sooner it happens the better will it be for everyone concerned.



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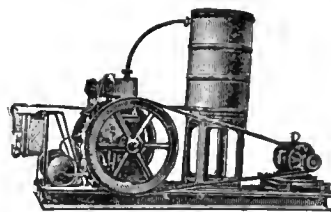
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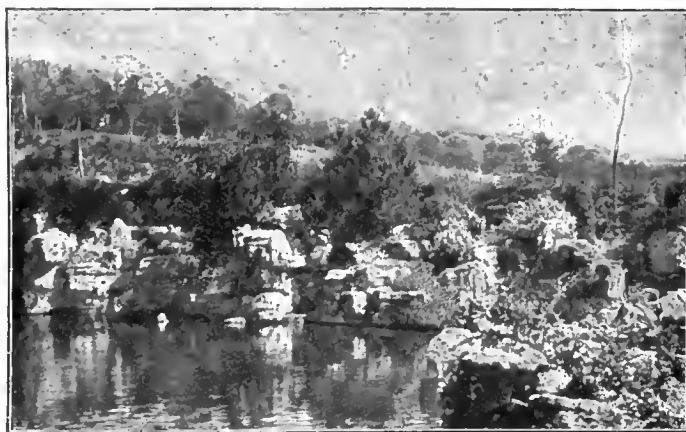
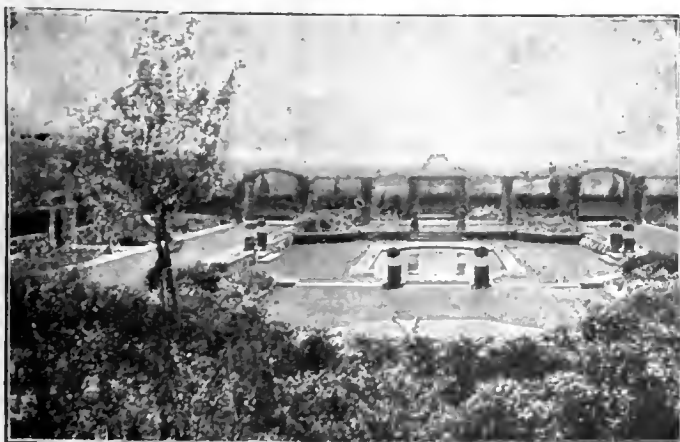
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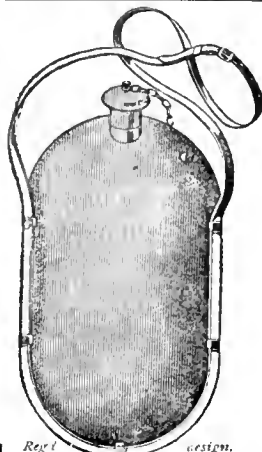
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Vol. LXV No. 2768

SATURDAY, MAY 29, 1915

[PUBLISHED AS
A NEWSPAPER]

PRICE SIX PENCE
PUBLISHED WEEKLY



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GENERAL SIR IAN HAMILTON, G.C.B., D.S.O.,
General Officer Commanding the Allied Troops in the Dardanelles



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THE SPIRIT OF THE FUTURE

GIVE the English people a chance, and they can adapt themselves to anything, within reason. And the war appeals to them, *pace* the pacifists, as being eminently within reason. As a scientific writer of some eminence has lately said, they "seem rather to like war with Germany." Pulled and pushed by the politicians and the papers, they have yielded remarkably little to the alternate impulses of blind optimism and pessimism that they have been told should be the patriot's part; that they have kept on so even a keel has been in spite of the majority of their instructors. For the most part they leave the speech-makers and the leader-writers severely alone, and devote themselves to an attempt to dig out all the meaning that may lie embedded in the calm, terse language of communiqués from the front. The efforts of politicians or newspaper proprietors to attract or deflect their attention seem comically puny; you figure a giant who is the People, studiously poring over the latest news, while on either side diminutive orators and wire-pullers are shouting admonitions to him through megaphones. It would make a subject for the satirical genius of Mr. Will Dyson.

Perhaps we expected too much in the way of light and leading from those who seek to control the state of mind of the nation. We get a fallacious notion into our heads—magazine stories have done much to foster it—of a strong, silent man who sits, spider-like, in the centre of a vast web of telegraph and telephone wires, and whose finger is on every pulse in the country. This is true enough of financiers, in so far as their doings are purely (if the adverb is appropriate) concerned with money; but these go wrong directly they touch human issues. Equally, it is true enough of a commander-in-chief at the front (in so far as his wires remain intact) to the extent to which purely military matters are concerned. But it is far from true of Government departments and newspaper offices, except in so far as their proceedings are a matter of simple mathematics. And even then they have been known to make mistakes in adding up the figures. A newspaper is often convinced that "a great wave of popular feeling" has arisen in the country by the receipt of a great flood of angry and incoherent letters—the work of some minority that has temporarily lost its head—and in any case is about as "popular" as the National Liberal Club. What it is that chiefly convinces a Government department that "the country is calling out" for this action or that, is a mystery into which it is beyond the scope of this brief article to probe; in any case it is, or one may hope that it will become, a peace time question. One could hardly in reason have expected that most of these walled-in office-dwellers would at once comprehend and direct the new stirrings of the national spirit.

What stands as the forefront of the people's spirit is the people's army; behind this stretch further ranks, from the much focussed munition workers to the wives and mothers whose brave patience is not the least factor of national stability. Few of the talkers who run up and down the ranks have much part or lot in the great movement that has assured our victory. The portrait which, of those at home, the people most often recall to their mind's eye is not of any gesticulating orator, but of the quiet figure of Lord Kitchener. He says very little, but they know that he "thinks a thundering lot," and they feel that his thoughts are their thoughts. Mr. Asquith, though, is in another case from the would-be directors of public thought. He has been big enough in spirit to see the national spirit as something far bigger. Humbly constituting himself the mouthpiece of the people, he has let the national inspiration blow through him to fine purpose, and has given us perhaps the only utterance from high places that is worthy to go down in history. Also, a negative but a notable achievement, he has refrained with characteristic dignity from the movement to bullyrag the people about "realising the war."

This remarkably stupid insult to the enormous majority of the people made one glad that they had no ear for the megaphones, being too busily employed in seeking out the rare grains of fact upon which their realisation supported its half-starved existence. It was a relief when the movement turned again into a fitting internecine warfare between the office-dwellers, and the papers, finding that the people were out of range, were led by one or two more perspicacious among

their number to renew their fire upon the real culprits, a few men who were magnifying their vocation into concealment for concealment's sake. This, at least, did solid good. The problem of spreading enough news for realisation, and of spreading it in a form concrete enough to cause some stirring of the blood, while keeping the enemy effectually in the dark, was and is difficult enough, though the wisest should have it in hand. The people's realisation, like the people's army, had perforce to come slowly. We shall prove to have done none the worse for that. An island nation with a powerful fleet can afford to deal even with the cataclysm of Europe by a gradual and organic process of growth. Germany knows well enough the meaning of our ascending curve of power and purpose. That is why the Hymn of Hate was written.

An unspoken consciousness may be felt, now, to be at the back of many minds, that after the natural period of human gestation a new soul of our country has indeed come to the birth. It is a birth too gigantic to be known at once for what it is, too vast to be visible. And the more than Gargantuan infant is naturally inarticulate as yet. But his thunderous crowing is heard from the troop-trains, as he reaches out to strangle the serpents that menace his cradle, even as did the infant Hercules. In another mood, he can show an infantile destructiveness at times; he must not be allowed, nor will the People allow him if we may judge by the talk of sensible men and women who can distinguish between patriotism and destructiveness, to smash those of his toy shops that are labelled "Made in Germany," and guzzle the sweets that they contain. He has much to learn, as have all babes, even the most prodigious. But we cannot instruct him—save by keeping him out of mischief—any more than we can instruct the individual infants who lord it over us until their time comes to take our place. As in their case, a wise provision of Nature puts his earliest education into his own hands, not into ours. Wide-eyed, this new-born, inarticulate soul of the nation absorbs, wonders and watches. Later, he will begin to criticise; his "Why?" will resound in the land. We may reflect with trepidation that our answers will need some preparing. He is the "insurgent bigness" of Mr. Wells' brilliant fancy, "The Food of the Gods;" but his giant size is the outcome not of invention, as in that book, but of her mother Necessity.

Meanwhile, the people who are in the pre-war generation of thought and feeling, the people regarded as a conscious, articulate mind, not yet readjusted to the huge implications of what is to come, is as sparing of speech and as inscrutable of eye as ever. And of that abstract People, since all abstractions are no more, really, than figures of speech, it may be well to remember that the people who read this paper are a concrete, realisable part. When we ask the question as the office-dwellers so often ask it in vain, "What are the people about?" or, in the words of the philosopher Caddes, "What's it all for?" there is something to be said for narrowing down the enquiry into the form of "What am I about? What do I mean? What do my family, my business, my interests mean?" Or, for that matter, "What does 'Land and Water' mean?" To the last question the consistent reader will return a simple answer: It means among other things the best critical analysis of the momentous operations on land and sea which are shaping the destinies of Europe—an analysis that is free from bias and uncoloured by controversy: it means facts, and clear, straightforward reasoning about facts. When we connect this idea of a meaning with our part responsibility for the parenthood, small though that part may be, of the nation's new spirit, we may reflect that our small share is not unpractical. The finer the child, the greater its destiny, the more it needs, in the first stages, simply—nourishment. And fact, properly presented and co-ordinated, is the nourishment of reason, even as reason is the stuff of which the things of the spirit are built up. The new spirit of the nation, the spirit, for instance, to take the clearest and the most cogent case, of the men who return when the long job is done, will be a spirit that knows, and seeks to know, new things, and a spirit that *thinks*. We must be prepared; we must be ready to see many old shells broken, many unforeseen products of "insurgent bigness" arising. But we shall not be unworthy of the new life. Give the English people a chance, and they can adapt themselves to anything, within reason.

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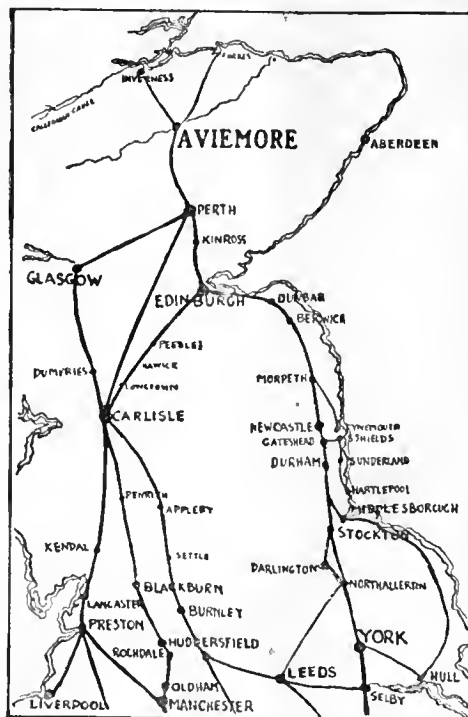
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THE WAR BY LAND.

By HILAIRE BELLOC.

NOTE.—This article has been submitted to the Press Bureau, which does not object to the publication as censored, and takes no responsibility for the correctness of the statements.

In accordance with the requirements of the Press Bureau, the positions of troops on Plans illustrating this Article must only be regarded as approximate, and no definite strength at any point is indicated.

ITALY.

THE intervention of Italy will bring into the actual fighting, within a few weeks, perhaps 800,000 additional men. That is, we shall have equipped and present in any area of operations that may be chosen, and near enough to the front for immediate operations or the immediate reinforcement of the same, twenty new army corps on the side of the Allies.

Curiosity is eager to suggest the many ways in which this newly arrived force might operate. There is a form of vanity which is satisfied by attempting to forecast future events, to profit by the accuracy of such a forecast, and to be silent upon its errors.

All this spirit is quite valueless in the formation of a sound judgment with regard to the campaign as a whole, which sound judgment is the sole legitimate object of such notes as these.

We can only bring to the formation of such a judgment certain known truths and show what conclusions may be built upon them. Of alternative plans or results built on such conclusions one can say no more than that any one of them is possible, none of them certain.

Now, what are the known facts connected with the intervention of Italy?

The great, the salient fact, is connected with that point upon which I have insisted so continually in these columns—the question of numbers.

The tide had already turned against the enemy, but it had turned in an unequal way. There was a superiority in the numbers of men against him upon the west. There was already a slight superiority in weapons and in munitions, and particularly in those heavy guns which are the determinant factors of the present campaign. But while the total of the Allies was already superior to the total that the enemy could put into the field, even with his last reserves, the inequality of distribution gravely affected the situation. For in the East it had not been possible to equip a sufficient number of weapons to make the opposed numbers in men there more than equal, while in munitions, especially for artillery, and particularly heavy artillery, the enemy enormously outweighed our Ally upon that front.

Now, the entry of Italy into the field throws a new weight into the scale in this mere point of numbers, and that weight is of the very highest strategic importance.

Theorists may discuss, and the future will prove, the respective values of the new fighting force and its enemy, but what is absolutely certain is that it accounts for and displaces great numbers of that enemy.

The situation may be compared to the case of ten men trying to break out of a corridor against twelve. They could not break out if all

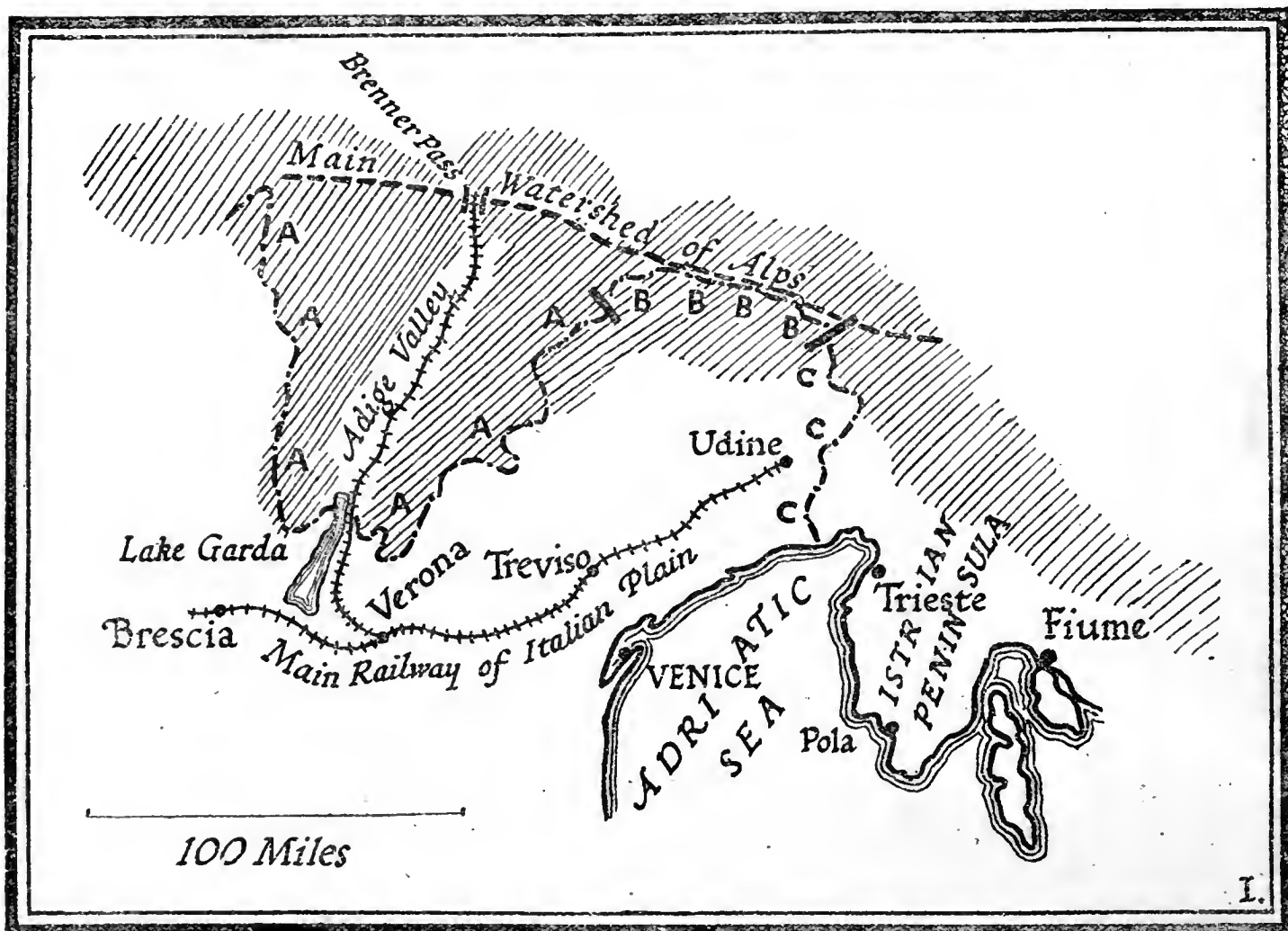
twelve were opposed to them at one end of the corridor, which should be the only issue; but if there are two issues, and if you have eight opponents at one and only four at the other, it might well be that, by a proper distribution of force, the ten men, leaving only just enough at one end to contain the eight against them there, could, with the remainder of their force break through the four at the weaker issue of the corridor.

But supposing while you were making this attempt a door opened in the side wall of the corridor and three new opponents appeared! It is obvious that such an appearance would heavily weight the chances against the ten men breaking out. It is probable that it would turn the scale.

They might affect to despise the new opponent; they might be his superior in experience of the fighting; they might in any number of ways boast of real advantage over him; but the undoubted fact would remain that they would have to detach some part of their strength to deal with him at a moment when that strength was whittled down to an already dangerous inferiority against their original enemy as a whole.

Now, if we try to put the thing numerically we discover that the advent of the Italian mobilised army into the field would at once fix at least ten enemy army corps. It cannot possibly do less than that. Allowing the maximum of natural advantage and of war experience to the enemy, an offensive strength of 800,000 cannot conceivably be contained by less than 400,000 men under even the best geographical conditions. The French—under worse geographical conditions, it is true—could only just meet an offensive in the proportion of sixteen to ten last August, and ten corps on the Austrian-Italian frontier would be sixteen to eight. As a fact, the intervention of Italy will cost the enemy more than that. I deliberately put the minimum number conceivable.

The next elementary truth we must notice in this connection is that this fixing of so much enemy strength is quite independent of the first chances in the field. In the clash of armies before a decision is arrived at, or before the establishment of a prolonged defensive, delaying a decision, is achieved, everything is at a venture. We do not know, until the action develops, even the trend of the war; but the essential thing from the point of view of the Allies as a whole is the effect upon that numerical estimate which has been continually insisted upon in these pages because it is fundamental to any sound judgment upon the war. Ten army corps must come from somewhere. They will not come from the West, for they are not present in the West; they will not come from some great reserve, for there is no such great reserve in the hands of the enemy. He is now in the very act of using his great winter-trained reserve, his third batch, and, save for the frills and the boys growing up to manhood, his last. They must come from the East



and from the forces behind and feeding the Polish front. Much of this force has been already long present upon the frontier, for Italy's intervention has been a possibility for months, and a probability for weeks. Much more of it has been lying behind the first line and waiting until it shall be discovered where the pressure will come. But, at any rate, the final decision of Italy, affecting the southern enemy front, dries up reinforcement elsewhere, and one can lay it down that the entry of Italy will especially relieve the enemy pressure against Russia upon the East.

The next point to consider is the geographical nature of the Austro-Italian frontier, which forms the new enemy front.

THE ITALIAN FRONTIER.

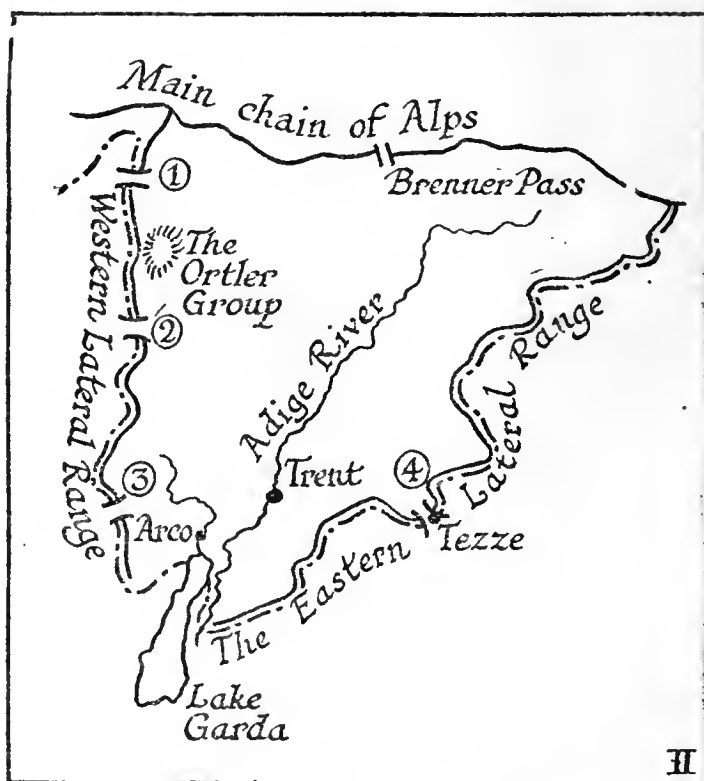
The Italians are working upon a front which is everywhere strategically disadvantageous to them. Were it otherwise, one would have allowed a much larger number of enemy army corps to be fixed by their action. The enemy has everywhere the geographical advantage from the sea to Lake Garda, and this fact will dominate all the opening phases of the campaign, whether Austria or Italy takes the offensive here. To appreciate this capital truth, let us analyse that frontier.

It is clearly divided into three sectors, marked on sketch (I.) AA, BB, and CC.

I. The first (AA) is that of the Trentino, or basin of the Upper Adige (corrupted in German to Eltsh), a perfectly illogical piece of frontier, coming right down in a salient within what is geographically Italian—that is, upon the southern slope of the Alps. But it has none of the disadvantages of a salient.

A salient—that is, in plain English, a thrust-out wedge—is weak in proportion as you can

attack it from either side, and so make people at the point nervous about their ability to retire. But the salient of the Trentino (so called from the town of Trent or Upper Adige basin) has upon either side of it two great walls, which are the lateral buttresses of the main Alpine chain. These lateral buttresses are not impassable. It is conceivable that under favourable circumstances, and with the advantage of some unexpected surprise, one or more passes on the east or west of this triangle might be turned. If this were successfully accomplished, the Trentino



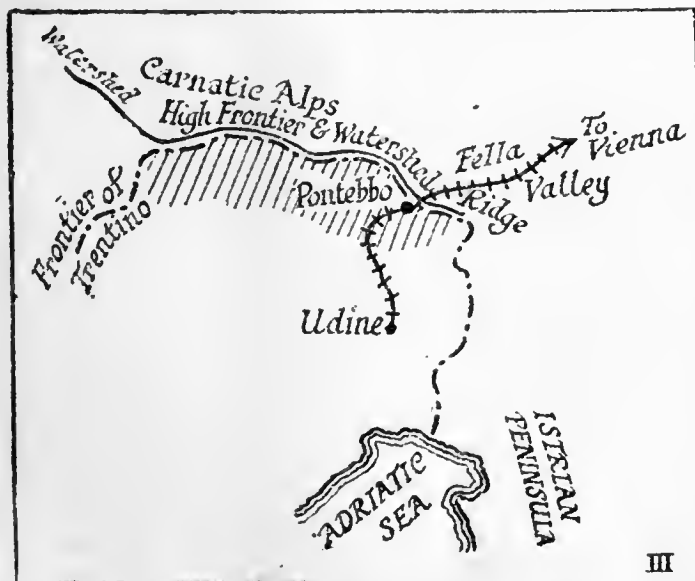
below such a flanking movement would have to be abandoned by the enemy. But, with normal prevision upon the part of the enemy, such a move would be impossible. On the west the Stelvio Pass—(1) on the foregoing sketch—is quite impassable against a most moderate defensive: a true mountain road and still blocked with snow. The Tonale (2), south of the great frozen mass of the Ortler, is in no better condition. There is an easier pass (3) only a few miles to the left of Lake Garda, but it is still a single mountain road through a defile, and on either the main Adige Valley or up the Arco Valley from Lake Garda there is no room for any deployment. The railway negotiates the Val Sugana over the pass at Tezze (4), but there is no true passage here of any considerable force.

There is, indeed, only one avenue up the Trentino, which is that of the main Adige Valley, and an advance up the Adige Valley would be the mere forcing of one narrow road. Now we know how immensely powerful the modern defensive is, and on the top of that the town of Trent, a couple of days' march from the valley, is a strong fortress.

It may fairly be said that the Trentino is for the Austrians a defensive asset of the first quality, and that if Italy can force it she will have achieved a task which military opinion throughout Europe regards as one of the utmost difficulty, and will correspondingly raise her prestige.

But the forcing of the Trentino, supposing any appreciable strength lay behind, would be barren enough of result. The valley of the Adige leads only, like all those tributaries of the Po, to the main chain of the Alps, and though the Brenner Pass (which is its conclusion across the main ridge) is the easiest of the great Alpine highways and the historic road over the mountains, modern defensive opportunities make it impregnable to any force save one overwhelmingly superior to the defenders.

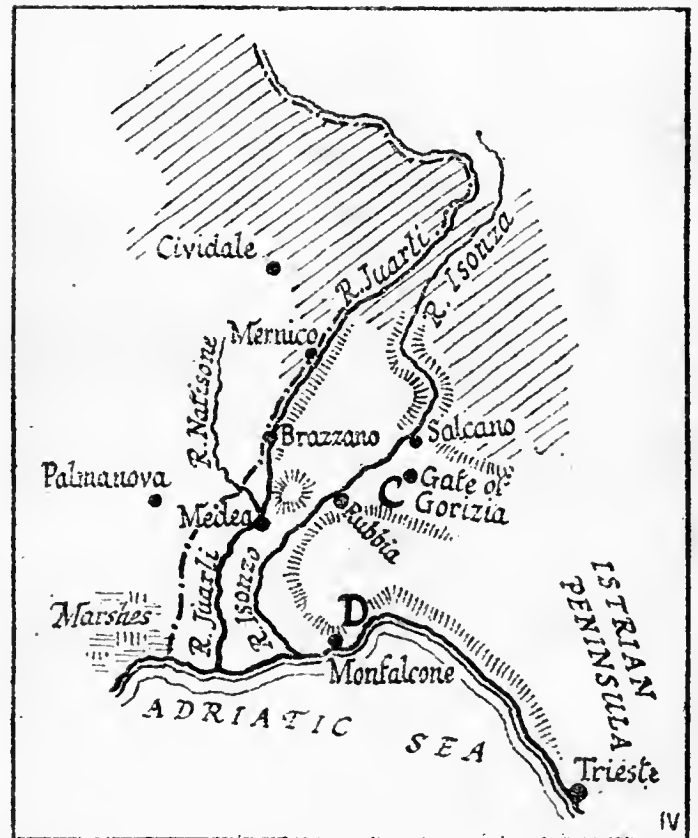
II. The second sector of this front is that of the Carnatic Alps. These form a ridge quite unbroken save at the Pass which leads from the Fella Valley past Pontebbo, to the sources of the River Save. That gate, though high, is crossed by a railway, and is, like the Brenner, one of the historic roads of invasion; it was Napoleon's road; but it is far too narrow for an attack in



force by armies upon the scale engaged in this great war against any adequate modern defence.

Here again then, the defensive has an overwhelming opportunity, which nothing but sheer exhaustion or crude incompetence would forego, and between this Pass and the Upper Adige Valley, a matter of ninety miles, there is the high Carnatic Alpine wall, which no large body of men could surmount against a defensive worthy of consideration.

III. There remains the third sector of the frontier, which runs down south again across the



bulwarks of the Julian Alps to the Plain of Venetia, and across that plain to the sea.

In the mountains where the frontier follows, for the most part, one of the lateral spurs of the main Alpine chain, the conditions still are those of the first two sectors, but when the line comes down on to the lower level and towards the plain, the defensive has, indeed, no advantage apparent upon ordinary maps. But look at the district on any maps of fairly large scale, and you will see the way in which the frontier has been drawn so as to protect the all-important Istrian Peninsula from invasion, in a fashion which deliberately or accidentally has given advantages to the defensive.

The frontier first follows the River Juarli, which has, as it approaches the plain, defensive positions all along its eastern, or Austrian, bank. There is only a tiny front on this frontier, of less than twenty miles (nearer fifteen), upon which an insufficient force could deploy, and though the country behind it is not mountainous, there comes immediately parallel with the frontier, and close behind it, the defensive line of the Isonzo, with hill country following everywhere the eastern bank of that river.

Now, this, the only vulnerable sector, demands closer examination.

The political frontier issues from the hill country in front of Cividale at the village of Mernico. It then continues down the valley of the Juarli. There it cuts across to the Natisone, passes immediately in front of Palmanova, and

reaches just south of that town the sea marshes beyond which nothing can be done. The total distance from the issue of the hills to the marshes is, as the crow flies, no more than fourteen miles.

All the first part of this—that is, all the left bank of the Juarli as far as Brazzano—gives the Austrian defensive an excellent series of positions, though there are places where the right bank dominates the left, while south of Brazzano and half-way between that point and Palmanova there is a knuckle of high land—X—north of Medea, on which any delaying action fought by the Austrians against the Italians on this narrow gate would find a *point d'appui*.

But let us suppose no attempt is made to save the merely political line. The Austrians can readily abandon it, and discover immediately behind it (not three hours' march away) the parallel and much more formidable line of the Isonzo.

This river issues from a gorge which can be defended with the utmost ease as far as Salcano, while the southern part of the line towards the sea is dominated everywhere by clearly marked heights from Rubbia to Monfalcone on the sea itself. These heights I have indicated on the sketch by the letters C-D.

There remain between the two positions the plain and town of Gorizia. This plain is not more than six miles across, encircled everywhere with hills, and in a situation for artificial defence as good as any to be discovered on the frontier.

The line of the Isonzo is a really formidable line. Until it is carried Trieste and the Istrian Peninsula are safe, unless, indeed, a naval argument modifies all these conclusions, drawn from Continental conditions only. It is the point of sea power. The sea road towards Trieste is but a ribbon, everywhere confined between hill country and the water, *but it is everywhere under the guns of the Italian Fleet*. That fleet is, by far, superior to the Austrian Fleet in the Adriatic.

On the other hand, this war has shown that a fleet cannot cover a coast against the danger of submarine attack.

The modification of the land strategy produced by this consideration I must leave to my colleague who deals with naval affairs upon this paper, for I am not competent to discuss it. I merely note it in passing as conceivably negating all that is to be said upon the strength of the Istrian frontier regarded merely as a military line by land.

To sum up: In all three sectors, though for different reasons in each, an Austrian defensive has very heavy opportunities against an Italian attack. In the first sector, the Trentino, because the Austrians hold the mouth of an enclosed valley. In the second, because they have a wall, the Carnatic Alps. In the third, because they have on the frontier itself, but much more on the Isonzo, a good natural defensive line. Those who conceive of the campaign as a mere occupation of the flat country below the Alps by the Italians, accompanied by a voluntary retirement of the enemy until the watershed is reached, have not paid attention to the details of the ground.

The Italian offensive all along this stretch, then, from the Lake of Garda to the Istrian Peninsula, is heavily handicapped. It has only one real advantage over the defensive—a serious one, it possesses a first-rate lateral communica-

tion in the railway running on the Italian side along the foot of the Alps from Verona, through Trevezo, to Udine, which railway throws out branches to the north. The defensive in the hills has, of course, no such power of moving from right to left, or of sending munitions at will from point to point. But it is so governed by natural circumstances that this Italian advantage in artificial lateral communications is far outweighed.

Meanwhile we must carefully note that there does not exist on the Italian side corresponding advantages for the defensive against an offensive undertaken from the Austrian side of the frontier.

The defensive is so strong nowadays when it is properly entrenched that, with sufficient preparation, almost any line can be held. These remarks must, therefore, not be taken to mean that an offensive in equal numbers from the Austrian side would be successful. It might or might not be. But it would only be acting under the difficulties that every offensive acts under in modern war unless it is backed by very superior heavy artillery.

So far as purely natural features are concerned, the whole frontier is, strategically speaking, as much a temptation to the enemy to advance as it is the threat against an Italian attempt at the offensive.

All this is supposing that the enemy can really spare the men for a proper defensive, or even for an offensive. Whether he can spare them or no we cannot tell until the action has developed. But as I write this—upon Tuesday evening—there comes the news that skirmishes have already taken place upon the third of these three sectors; the front behind which lies the position of the Isonzo.

THE HEAVY GUN.

But this discussion of geographical details and the artificial strengthening of specified points is subsidiary in the present campaign to that one factor which is now known to be everywhere the decisive thing—the heavy gun and its munitionment.

Does Italy propose to force the extremely strong defensive line of her enemy? Only a superior concentration of heavy artillery delivering a tornado of high explosive shell will be of effect.

Will she find herself in a position to force the permanent works round Trent? They will resist for months, just as Przemyśl resisted for months, unless there is brought against them in great numbers the heavy mobile howitzer and with it masses of munition. That modern instrument of war, supplied for even forty-eight hours with an uninterrupted stream of projectiles and charges, will, as we know, dominate most permanent works. In a week or ten days it will dominate any permanent work. Five days nearly did for Troyon; ten days entirely did for Manouvilliers; rather more than a week for the permanent works of Maubeuge; a day or two for Antwerp; and a few hours for Namur. But in the absence of the weapon and its provision the permanent work resists indefinitely.

The lesson is such a simple one, it was so early seized by the French General Staff, it is so clearly the great tactical issue of the campaign, that one is almost ashamed to insist on it again.

though public opinion still needs that information.

The heavy piece decides. And what the fortunes of Italy may be in the next few days or weeks is a question almost certainly to be answered in the words that answer the question of Russian resistance upon the line of the San and the supreme question about what fate will attend the ultimate offensive in the West. It is the answer to the question why the enemy swept Galicia as he did. It will be more and more the answer to every remaining problem in this war.

Given the proportion of heavy guns, and of shell between two combatants at such and such a critical moment (and shell in the case of heavy pieces nearly always means, of course, high explosive shell—everybody has known that except a few sensational journalists), and you can with fair certainty predict the result.

The Italian State has had many months in which to prepare. She has had even more time than since she first began to interfere with German supplies in December. She has had time to produce new heavy pieces in great number. Her engineers are the most skilful in the world; her modern industrial power in the north is formidable indeed.

Whether full use has been made of all the opportunities thus present, particularly in this crucial matter of the heavy piece, the immediate future alone can show.

One last point must be remembered in connection with the entry of Italy into the war: it limits the avenues of enemy supply to the North Sea, and the North Sea is now at last strictly guarded. It eliminates the only Great Power in Europe concerned as a neutral to trade with the enemy. It is true that Italy had ceased to send war munitions through since December and January last. But now we know that nothing will go through. The neutrality of Switzerland

is, indeed, guaranteed, but in the matter of commercial supplies Switzerland will have to be (whatever official term may be used) rationed by the French and the Italians, for Germany will give her nothing.

(P.S.—As the above was written on Tuesday evening the news came through that the Italian covering troops had advanced towards the line of the Isonzo upon Monday, the 24th, meeting but little resistance, but nothing had developed at the moment of going to press worthy of comment.)

THE BATTLE OF THE SAN.

We knew last week, by the latest advices upon which the article in these columns was then written, that the Russian retreat to the San and the Russian proposal to hold the line of that river, the continuation of that line northward through Russian Poland, and southward to the Dneister, had in part failed and in part succeeded, as follows:

(1) The enemy had managed to cross the San upon a sector about eleven miles in length, beginning at Jaroslaw and going up to Lezachow.

(2) The Russians had determined to hold on to the very dangerous salient of Przemysl—why it was dangerous and the consequences of thus holding it we shall see in a moment.

(3) Upon the extreme south of the line the Russians had advanced over a belt of about eleven or twelve miles between the Dneister and the Pruth. They had there inflicted very heavy losses upon the Austrians in this region, but had not succeeded in going further than the Pruth.

(4) They had a similar success upon the extreme right or northern end of their line in Russian Poland, advancing by a belt of about similar width from the river running through Opatow (I do not know the name of it) to the parallel river running through Iwaniska.



In the week that has passed we have seen the development of this situation, and we have also had information which helps to explain it. The great main elements of the whole thing are these:

The entire enemy movement from its inception upon the Dunajec four weeks ago to the present day has had for its object the breaking of the Russian line.

The instrument for effecting this was a very large body of men, amounting altogether to perhaps a third of all the enemy's numbers in this southern part of the Eastern front, and mainly consisting of German troops. In artillery they massed no less than 4,000 pieces, of which (incredible as it may seem) 2,000 are estimated to have been heavy pieces of various kinds.

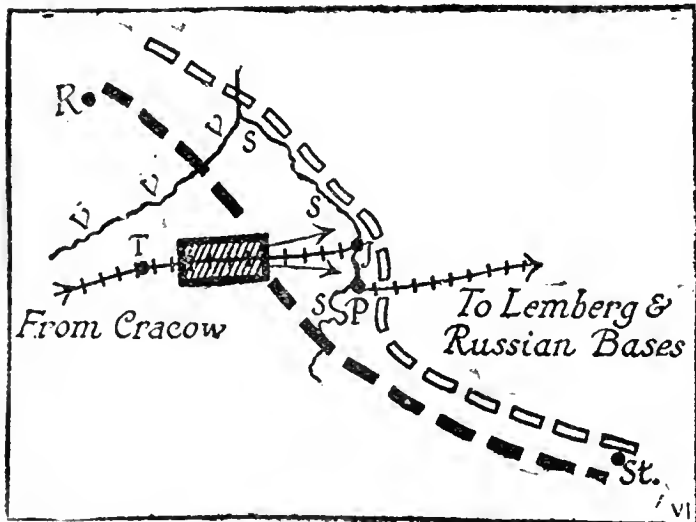
This gigantic "bolt" was very dense in general formation, and in its tactical action struck day after day in swarms denser even than has previously been seen upon the German side in this war.

On this account the Austro-German losses were extremely heavy: though the enemy had the advantage of retaining as prisoners most of those who fell upon the Russian side during these great operations, yet his total losses are almost certainly twice as heavy as the Russians, and perhaps more.

We discover that a concentration so enormous and the use of heavy shell to the extent, perhaps, of two million rounds, necessitated the advance of this main body strictly along the chief railway line, Tarnow-Jaroslav. All the indentation in the Russian line throughout the retreat lies upon that railway line, and the supply proceeding along it is the explanation of the whole central advance of the Germans and Austrians.

Meanwhile, above and below this central "bolt," the whole enemy line was advancing northward as far as beyond Kielce (K), southward from across the Carpathians nearly as far as Stanislau (S-T).

The whole thing may be roughly represented thus, where V-V is the line of the Vistula; S-S



is the San; P is Przemyśl; T-J the main railway line from Tarnow to Jaroslav; the shaded oblong represents the "bolt"; the shaded line the enemy, and the white the Russians. These last are perpetually retiring before the advance, and day by day, as they retire, just save themselves from breaking at the centre under the repeated blows of the "bolt," which is tied to, and launched along, the main railway. The process continues until this bolt reaches the San (S-S) at Jaroslav (J). Jaroslav is carried and

certain passages of the San forced. It looks for a moment as though the Russian centre was going to break at last.

The critical day we now see to have been Monday, the 17th of May; but the German forces across the San were unable to hold more than a narrow belt, Russian reinforcements arrived in sufficient numbers for the moment, the expenditure of enemy ammunition had partially exhausted his supply, and for rather more than a week the bolt was checked, and the Russians, as a whole, stood to the positions upon which they had been forced.

Meanwhile the retention of Przemyśl had given an opportunity to the enemy elsewhere than at the point where the "bolt" was acting—that is, elsewhere than in the neighbourhood of Jaroslav. Of that opportunity the enemy at once took advantage. He is, at the moment of writing, still pressing that advantage with all his might.

In the accompanying sketch of the whole line it will be seen that the retention of Przemyśl has not only produced a salient of a very peculiar



kind, but has left upon the southern edge of the "neck" of this salient, at D, an extremely vulnerable sector in the Russian defence. The main railway line, which has come south from Jaroslav, runs eastward here from Przemyśl towards the main base at Lemberg, and this railway lies but a very short distance indeed behind the positions to which the Russians have been pressed, at D. To cut that railway would be for the enemy, not indeed *equivalent* to the breaking of the Russian line, but the next best thing to it, and perhaps a preliminary to it, too. The whole district of Przemyśl would fall into his hands, a multitude of unwounded prisoners would be cut off, and there would be such an indentation made in the here curiously twisted profile of the Russian front that it might very well give way altogether.

The enemy, perceiving this, struck blow after blow at D for the possession of the railway. He is still striking those blows.

He is restricted here to a comparatively narrow front, because upon his right, between the two towns of Komarno and Drohobycz, is an extensive marshy district (M), in which troops cannot operate.

It is lucky for the Russians that this natural obstacle exists, for it prevents the enemy from extending the area of his attacks east of Przemyśl and it gives the Russian line here something to repose upon. But the enemy, to prevent a Russian concentration against him and to hold the maximum number of troops elsewhere, is attacking with almost equal violence beyond the marshes in front of and to the east of Stryj.

We have, then, proceeding at this moment, apart from the general fight all along the line and from Russian Poland right down to the Bukovina, three special centres of effort: (1) The now dwindling effort of what was the main bolt, north of Jaroslav. It has crossed the San, but has not got much further. (2) The effort in front of Stryj, which is subsidiary to the whole plan, and, indeed, principally directed to "holding" the Russians in front of it. (3) What is undoubtedly, for the moment, the main effort, that now being pressed with all the vigour the enemy can command against the main Lemberg railway line east of the Przemysl salient.

It is upon this last that we must concentrate our attention during the next few days; it is here that the success or failure of the enemy's great effort in its last phase will probably be determined.

The details of all this are as follows:

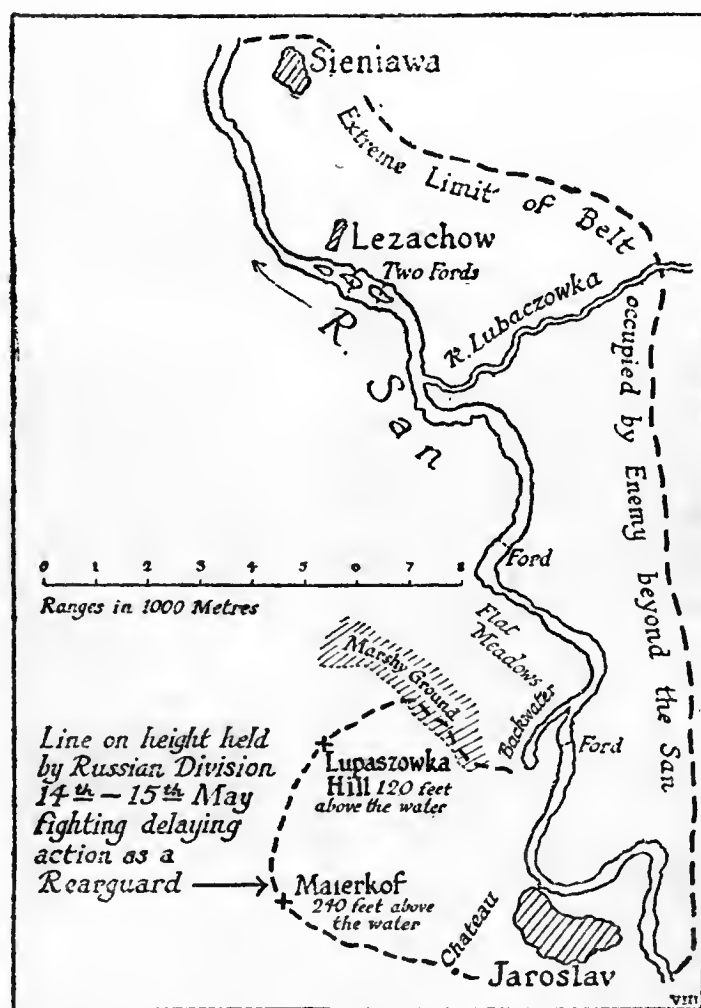
Upon Friday, May 14, the Germans under Mackensen reached the outskirts of Jaroslav and began their attack upon the outskirts of that bridge-head, behind which the Russian columns were retreating on to the other bank of the San. The Russian trenches followed the crests to the west of the town, the Meierkof, the Jupaszowka Hill, and the Château of Chemianski. The Russian rearguard posted here was not strong. It consisted of a single division, and its function was apparently no more than to fight a delaying action while the passage to the right bank of the San was being effected by the mass of its comrades. It succeeded in achieving its task, holding up Mackensen's Germans during the whole of the Friday and Saturday, long after dark on the latter day—the 15th; but before midnight the heights were carried and Jaroslav was in the enemy's hands.

During all this fighting and in the previous days, the Russians had been able to ascertain what units had been withdrawn from the Western front for this main enemy effort in Galicia. They would seem to have been the 1st and 2nd Division of the Guard, the 10th active and the 41st Reserve Corps; two more composite divisions formed of regiments specially picked for this work, and sundry detached units over and above these. The very high proportion of heavy artillery accompanying and permitting the advance of the whole great force along the railway may be judged by the fact that the Guards alone were backed by fifty heavy pieces.

On Monday, the 17th, the critical day in this area, the San was crossed in several places. The river offers, along the ten or eleven miles below Jaroslav, several opportunities for forcing such a passage under the cover of heavy bombardment.

The chief passage seems to have been effected at the fords of Lezachow. It would seem as though the enemy, once in possession of points upon the right bank of the San, had pushed down it, clearing the whole bank, for there was fighting in which certain Russian bodies were pushed across the Lubaczowska, where the enemy line touched Pradawa.

By the Tuesday morning, the 18th, it was fairly clear that the Russian line parallel with, but behind the San, at this point, would hold. It is true the Austrian body captured Sieniawa upon that day, but the enemy advance got no further. Roughly speaking, the Russian line now lies in



this region, as do the dots upon the above sketch, and has been able to maintain this position for a week.

Meanwhile, on the extreme north of the line in Russian Poland the Russians had successfully advanced on the Monday, and on this same Tuesday were consolidating their advance at Iwaniska. Their total line upon this day followed the stream from Iwaniska to the Vistula; uncovered Tarnobrzeg; cut across the Peninsula between the Vistula and the San to the neighbourhood of Nisko, and then ran up covering the river and lying on the left bank as high as Lezachow. The whole line is shown on sketch VII. on the preceding page. After Lezachow it yielded both banks for a stretch of eleven miles down to above Jaroslav, after which point it ran to, and corresponded with, the works surrounding Przemysl, went round by the south of that ring of forts, but came up dangerously far north on the east, only just covering the railway at D, then coming down sharply to the marshes of the Dneister. Beyond these it is not very clear how it ran, but apparently corresponded roughly to the Dneister line until the approaches of the Bukovina, where the success of a fortnight ago put it well to the south again, occupying Nadworna, but failing to include the important junction of Delatyn, failing to cut the railway between Delatyn and Kolomea, failing to occupy the bridge-head of Kolomea itself, but further down crossing the Pruth and occupying the point of Sniatyn. A little below the latter it went round north of the Pruth again, just failed to occupy Czernowitz, and so reached the frontier.

Such was the shape of the Russian front on May 17. This shape it still retains at the moment of writing (Tuesday, the 25th), and, as has been pointed out above, the danger-point is probably no longer the sector just north of Jaroslav, but the dent D, east of Przemysl.

Now let us see what has happened there at D. All the end of the week—Friday, the 14th, Saturday, the 15th, Sunday, the 16th—a bombardment was being kept up above the western works of Przemyśl, which the Russians had elected to defend. But it was not here that the main effort was to be looked for: that came ten miles away, to the east, at Hussakow, to which point the enemy got in his violent effort of the Monday and the Tuesday, the 17th and 18th.

It would seem that he captured Hussakow upon Tuesday, the 18th, towards the end of the day. But he was driven out of it: apparently, upon the Wednesday, the 19th. He thereupon did what he has done throughout this campaign—attempted a flanking movement, and struck hard at Lutkow—and Lutkow the enemy carried and held. Beyond this point he could not proceed, but the following rather more detailed sketch will show how dangerously close he is to the railway at this short sector of the front.

Meanwhile, away beyond the marshes, forces under Linsinger were fighting between Stryj and Stanislaw, trying to occupy the Russians in front of them and prevent their sending reinforcements to the neighbourhood of Przemyśl. They were, further, attempting to push the Russians before them beyond the line of the Dniester.

In the Bukovina the Archduke Eugene was doing no more than hold his own after the retirements towards the Pruth, which has been lately mentioned.

THE ENEMY ON THE EASTERN FRONT HAS NOT YET SUCCEEDED.

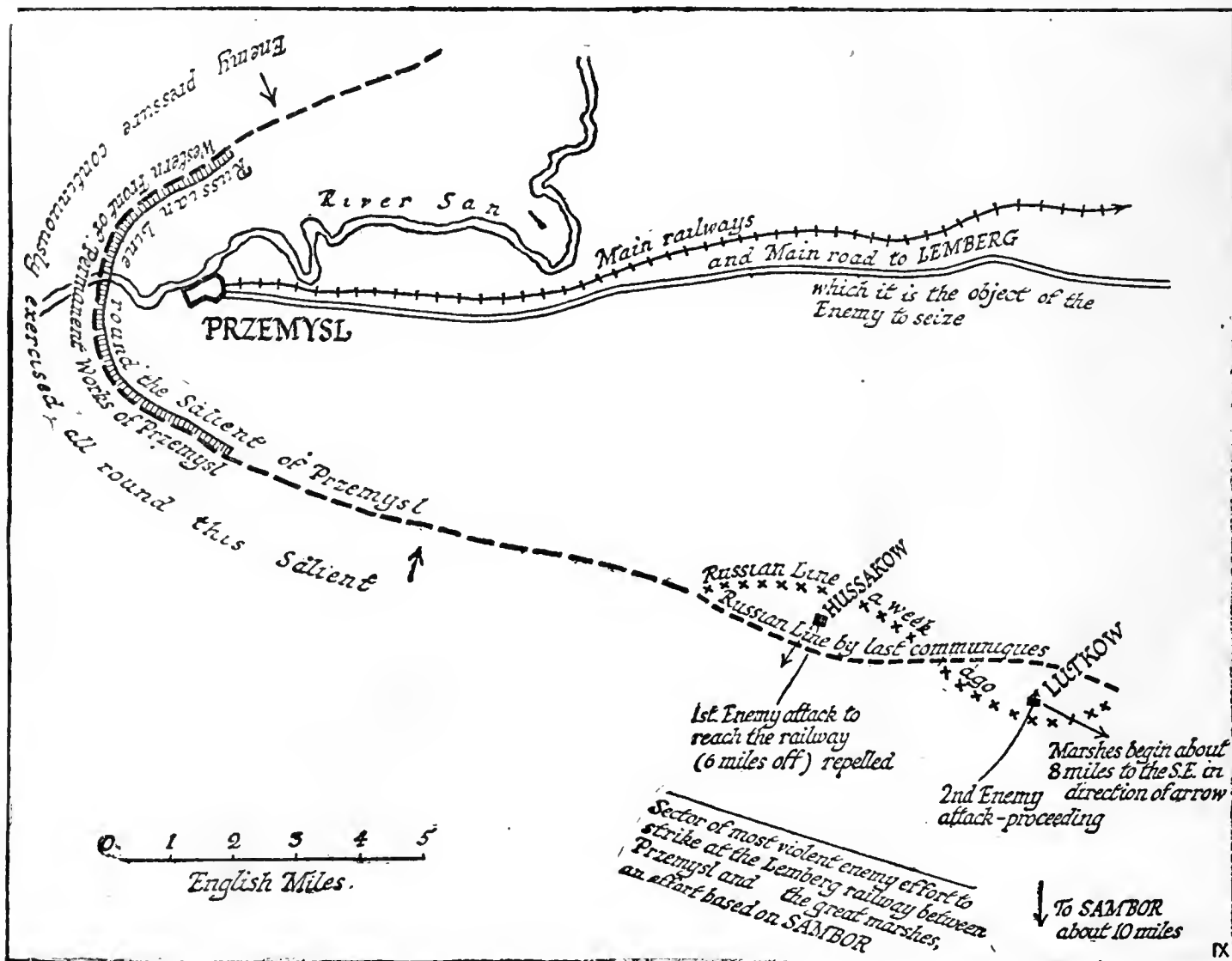
Now, the whole of this great battle, which is

still in process, has clearly for its enemy object the piercing of the Russian line, while the object of our ally is to preserve the cohesion of his line, in spite of grave lack of supply and in face of what has hitherto been the far superior munitioning of the enemy.

The whole meaning of this battle, therefore, lies in the two alternatives. Either the Russian line will remain intact or it will not.

If it remains intact the enemy is, strategically speaking, beaten. The fact that he has advanced; the fact that he has nearly cleared Galicia of the enemy; the fact that he has reduced the Russian forces originally present in Galicia by a sixth or even a fifth; the fact that he has destroyed or captured of their field artillery a twentieth or a tenth; his possible entry into Przemyśl—all these matters, which are so many scores on his side and which will necessarily, and perhaps rightly, impress general opinion, are in a different category altogether from the major business of his strategic objective—the piercing of the line.

As to losses, though he has the advantage of taking prisoner the stragglers and wounded of the retiring enemy, his actual loss of strength is certainly very much heavier than that of the Russians, for he has attacked in the most compact shape and every succeeding day with the intention on that day of breaking, at no matter what expense, his opponent's line. As to his geographical advance, it gives him strategically only this advantage—that the good railway system of Galicia passes more and more into his hands, while his foemen are more dependent as they retire upon the inefficient railway system of Russia.



As to the purely moral effect of certain names such as that of Przemyśl, unless a garrison and a great deal of material were captured at the same time, it may be neglected.

But the piercing of the Russian line would be quite another matter. It would be a decision.

Now the elements which decide the chances of this event are numerous. They include, among the more important, the numbers of men engaged, and the equipment of the infantry and its munition. But far and away the greatest of all the factors in the issue is the munitioning of the artillery, and particularly of the big guns and howitzers. Upon that, more than upon anything else, the issue will turn.

We are not yet in possession of known facts which permit our judgment to repose upon a secure foundation. But we can estimate the probabilities of the situation.

Power of artillery, and particularly of heavy artillery, obviously depend upon these four factors:

(1) The number of pieces.

(2) The munitions present—that is, the amount of shell present for discharge from those pieces.

(3) The rate at which communications can send up supply to the front (which rate governs the rate of discharge).

(4) The rate at which heavy munitions can be produced or purchased at the sources of supply, which ultimately governs the whole problem.

To these four factors one might add two more: The power of "spotting," through air-work or otherwise, so as to determine the range, and the general efficiency in the handling of the pieces. But these last two points may be eliminated, as they are pretty well equal on both sides upon the Eastern front.

Now, these four factors being the deciding things we must first of all recognise that in the number of pieces between Central Poland and the Bukovina—that is, upon the three-hundred-mile line which is the scene of the present great battle—the enemy has certainly an advantage. He can produce heavy pieces in greater numbers than the Russians can. And since he has been able to keep his heavy artillery going forward at the rate of about five miles a day, he will, during the check imposed upon his advance for a whole week or more, have certainly got everything into line.

Again, on the fourth point, the ultimate power of producing munitions, the enemy clearly has an advantage. He is far more highly industrialised than Russia, and Russia's power of purchasing from outside is limited by the blockade, including the closing of the Dardanelles, which leaves her no avenues of supply save the little gate round the north of the Baltic, the port of Archangel, and the very distant ports of the Far East.

The issue really lies, therefore, in the second and third points: the supply of ammunition present on the front and the rate at which the communications can pass it up. Sooner or later the great supply of heavy artillery ammunition can be reaccumulated by the enemy in greater amount than by our ally, but can he produce it in the crisis of this particular battle in sufficient amount? And are the advantages of communication lying behind his line still so superior to those lying behind the Russian line that he will maintain a secure superiority in the crisis of the battle?

It may be doubted, and for the following reasons:

The expenditure of heavy artillery ammunition during the last month upon the enemy's side in Galicia has been like nothing hitherto attempted in the war. The dozen or so great preliminary actions by which the French have laid their foundation in the West, and the two or three in which the British have supported them, involved a concentrated fire of from half an hour to four hours at a time, with long intervals between each outburst. The intervals were thus prolonged because the Allies in the West rightly believed that time was upon their side, and were determined, if they *must* shoot away very large amounts in these preliminary actions of the last three or four months, yet to shoot it away at a rate less than the rate of accumulation that was going on behind the line. They are rightly determined that when the biggest movement of all comes there shall be an overwhelming reserve of shell.

But the enemy in Galicia was, during all May, fighting against time and determined, for political as well as for purely military reasons, to do his very utmost. The enemy in Galicia was doing with his munitions what the Allies in the West will only do with *their* munitions when they choose to provoke and to initiate the crisis of the war.

Therefore the enemy in Galicia was perfectly lavish with heavy artillery munitions day after day.

The intervals between each outburst of his concentrated fire were not intervals of weeks, but only of days, and sometimes of hours. There was a deluging of the Dunajec and Biala line for three whole days—the last two days of April and the first of May. Twelve miles further on, in the middle of the first week of May, there was another such deluge of shell. At the end of the week, a third upon the Upper Vislock and across the plain to the Vistula; two more in the next week—and so forth. While, upon reaching the line of the San, at the end of three weeks, the forcing of that river above Jaroslav was accomplished exactly as the forcing of the Dunajec had been accomplished twenty days before—by a riot of heavy shell.

Let it be noted, further, that although the San was forced under this immense expenditure of ammunition, there did not follow a Russian retirement such as took place upon the Dunajec.

A sector of the River San, a full day's march in length from the Jaroslav northwards, was possessed and held. But after that feat the Russians forbade a further movement forward. They continued securely to hold the lower reaches of the river. To the north, beyond the Vistula, they actually advanced, as they did to the south between the Dneister and the Pruth. Meanwhile, such immediate visible supply of heavy ammunition as the Russians could command had apparently been coming up from the bases in Russia. The railway system behind the Russians is insufficient, but it increases in power as the Russian communications shorten.

One may put the matter—quite hypothetically, of course—in terms of given spaces of time. Suppose the enemy has largely exhausted his supplies at the front, and cannot renew them for, say, a fortnight or more, that would be ample time for the consolidation of the new Russian

line, and the attempt to break it would have failed.

Now, supposing the Russian line—on account of this gradual depletion of munitions on the enemy's side and correspondingly gradual accretion on the Russian side—to stand, why would such a dull result be equivalent to a strategic defeat for the enemy?

Because in these moments, which are the critical moments of the whole campaign, there can be no such thing as the establishment of a deadlock.

The enemy is fighting in the East in order to get his decision, and, having got his decision, he would reverse the machine and put all his energy into an attack on the West. He must hope to deliver that attack with his full weight before the Allies strike their main blow. Quite apart from the intervention of Italy, that must necessarily be his general plan. There is no other.

This being the case, he is under the necessity of achieving his object in the East within certain limits of time, or of sacrificing himself again in the East when he turns back westward. If he attempts to hold the ground he has conquered in Galicia—as probably he will—he is thereby weakening his oncoming work in the West, and he is exposing himself to a counter-offensive whenever the accumulation of Russian supply permits it. In a word, if the Russian line stands, then the enemy is simply, for all his efforts in Galicia, coming back to the strategic conditions existing before he struck his great blow.

He has achieved a great deal. He has saved Hungary from invasion, and he has raised, for what that is worth, the already determined spirit of the civilian population behind his armies. But he has not done what is necessary to the prosecution of his plan. He has not released the full reserves of energy which he will require immediately upon the Western front.

When I speak thus of “reversing the machine” and “turning its reserves of energy towards the Western front,” I do not only mean an accretion of the enemy in numerical strength of men upon the Western front. I mean even more the releasing of munitions and guns for the work there; and the direction of his productive capacity, of his streams of shell, westward, after their outpouring for a month past towards the East.

Let us sum up, therefore—or, rather, repeat—and say that we are still awaiting in this great battle of the San one of two issues: Either the Russian line breaks or it does not. And if it does not break the enemy is a great deal further from his chances of an inconclusive peace, and a great deal nearer thorough defeat than he was when he crossed the Dunajec.

But let us not forget the alternative. If the Austro-German forces under the effect of superior munitionment for the heavy pieces do pierce their opponent's line, they have all the southern part of it at their mercy, they compel the Russians to lose the line of the Vistula; they will be in a position to act quite soon with very heavy reinforcements on the West, and they will be nearer to the goal of what they term “an honourable peace” and to the saving of Prussia than they have been since the December morning when they pierced the Russian front before Warsaw in that terrible crisis of which, in this country, we heard nothing, and the

extreme peril of which was but just barely conjured by the restoration of the Russian line upon the third day.

THE DARDANELLES.

Of the operations upon the Dardanelles we know nothing save that we have the casualty lists, as yet incomplete, and that the first enemy position, that of Achibaba, is not yet taken. It is clear that the general plan connotes as great an interference as possible with the enemy's munitioning in shell and reinforcement in numbers from the Asiatic side across the Straits, and the hope that this interference may prove fatal ultimately to his continual resistance. How far this hope is justified only the future can tell.

THE WEST.

The really important point about the Western front during the last week, if we regard the war as a whole, is purely negative. It is the refusal of the offensive until the chosen moment. There has been local work on the lower slopes of the Notre Dame de Lorette position, but what happens here does not very much matter, for now the junction of the lateral communications at Lens is well in range.

There has been more important work straightening out the dent between the two salients occupied in the advance of a few days ago, the one in front of Festubert, the other in front of Richebourg l'Avoué, each rather under a mile in depth. It was in this straightening out of the dent between the two salients that the incident occurred which is worthy of comment in a separate note.

A NOTE.

There are two perfectly well authenticated pieces of news of which we have the best evidence this week, and which, though they only concern slight details, are most significant.

They are of a nature which those who concern themselves with the moral issues of this war are more concerned with, perhaps, than is military criticism; but that criticism also can learn a useful lesson from them.

The first piece of news is this—we have all read it in the papers under the best authority.

A body of Saxons (presumably without officers) were advancing to surrender to the British the other day. They held up their hands in sign of their desire to be made prisoners and to be relieved of the strain of war—for they were in a very perilous position.

As, rightly or wrongly, it is admissible in North German morals to use such methods as a ruse, the British troops continued to fire upon the men thus desiring to surrender, because they could not tell whether the holding up of hands was an action done in good faith or was what our forefathers would have called a piece of treachery.

Meanwhile this body of presumably officerless Germans was observed by other bodies of the enemy whose officers were still present to control them, and these at once poured in a fire which massacred the would-be surrenderers.

Throughout this war the great military virtues of the enemy have been clearly apparent: his patient preparation and his discipline chief, perhaps, among the rest. But there has

been a tendency, especially in this country, to forget that the particular type of military excellence the enemy displays carries with it and connotes corresponding weaknesses. The French are fully aware of this truth; and it would be well if public opinion in this country would seize it also, because upon it must largely be founded any just forecast of the future.

Conceive of a body of British troops, even though deprived of their officers, thus advancing, when they were not surrounded, simply because they were feeling the strain too much, and proposing to surrender! Further conceive other bodies of British troops at the orders of officers surviving among them shooting down these defaulting members of their own body! The story would not be credible.

In the case of the North German it is perfectly credible, and, indeed, we all know it to be true.

Why is this? It is because the type of discipline produced by Prussian tradition is mechanical. The fact that the men massacred were Saxons and the men massacring them presumably Prussians is of some weight, because the inability of the various German tribes to coalesce (although they are perpetually shifting and changing) is one of the chief marks of European history for 2,000 years. But we know well enough that exactly the same thing would have happened if the surrendering troops had been Prussians. What happened was that a body of modern German soldiers, having lost their officers, turned at once into an utterly different organism from the same body possessed of its officers. That means, among other things, that a break-up, when it began, would be exceedingly rapid. It means, of course, a great deal more than the mere function of the officer in the Prussian system. The whole anecdote is enormously significant and must be carefully weighed for its full value to appear. It must be weighed especially by those who know the opposite pole of European civilisation and who are acquainted with the promotion from the ranks which in the French service has been continuous throughout this war. The words used by the English officer describing this curious scene merit textual reproduction:

"The remains of a battalion of Saxons . . . thrown into the fighting, having decided to surrender en bloc . . . some hundreds strong . . ."

The second anecdote, equally well authenticated, is that of a body of sixty Germans who behaved as follows, obviously pursuant to some general order:—

They first of all stripped the British dead of their uniforms. Then they put on these uniforms. Then one of their number who knew English thoroughly was ordered to advance towards a British trench and to call out: "Don't shoot, we are the Grenadier Guards." An English officer thereupon left the British trench, approached the disguised Germans, and was at once shot at—luckily he was missed. The British then, after preliminary fire, charged with the bayonet and killed every one of the Germans who had acted in this fashion.

Now, it would be easy to waste rhetoric

upon this second example of the enemy's methods, but for the purposes of these notes I am concerned only with the military lesson to be drawn from them. It is of a piece with a thousand other details in the war, all of which may be combined under some such formula as this, upon which all the enemy's mind reposes:

"War is nothing in itself. It is but a means to an end. All restraint upon it *due to the isolated military temper* is a cause of weakness."

That is exactly the Prussian tradition. The chivalric side of war (which proceeds from an isolation of the military temper and is a product of soldierly living) is regarded by the Prussian tradition just as a chemist regards some bye-product in a process of manufacture, which bye-product is due to the isolation of his material and hurtful to the object he has in view.

That the spirit of the soldier should permeate the State, as it did in Rome or in Revolutionary France, is the last thing the Prussian theorist desires. It would breed what are, in his eyes, romantic excrescences of sentiment, hampering the progress of the State and strangling its growth. The soldiers are, in the Prussian scheme, instruments conformable to mechanical formulæ in the service of the State: they must never produce an *organism* developing virtues and a savour of its own—once they do that they deflect the aim of the State as a whole.

Now, one of the most interesting (and purely military) questions which the war will decide is whether this fashion of treating warfare is ultimately successful. It has given us example after example of actions which have no direct military effect, which are intended only to impress civilians or neutrals. It has given us the use of poison, and may very well before the campaign is over give us an example of massacre.

As a mere conjecture I would suggest that this spirit would betray a very great weakness in defeat, not because it is compatible with courage—on the contrary, we see it permeating men who display the utmost courage in facing death—but because it is the very opposite of instinctive. Laborious calculation is a necessity of its existence, and in the disarray of defeat it would go to pieces; at least, so I surmise.

Hence, if a soldier can help the State best by spying, he must spy: by poisoning, he must poison: by treason, he must betray: by death, he must be willing and ready to die.

It is a system productive of very great results, as we have seen for two hundred years. The principal objection is that it is too simple and omits the incalculable part in the human affairs. Also, it wastes energy enormously in the repression or elimination of subconscious, instinctive things; especially of those produced most naturally in military life, from the profound, such as Honour, to the superficial, such as the *Panache*.

H. BELLOC.

MR. HILAIRE BELLOC'S WAR LECTURES.

Mr. Belloc's next lecture at Queen's Hall, London, will be on Wednesday, June 2nd. It will be illustrated by coloured slides of the recent fighting and will deal with the present position of the war.

Mr. Belloc's next lecture at the Winter Gardens, Bournemouth, is at 3.30, Monday, June 28th.

THE WAR BY WATER.

By A. H. POLLEN.

NOTE.—This article has been submitted to the Press Bureau, which does not object to the publication as censored, and takes no responsibility for the correctness of the statements.

A WEEK OF CHANGES.

THE past week has been almost barren of naval news. No operation at sea is reported. There appears to be no material change in the position in the Dardanelles—none, at least, affecting the share the Navy is ultimately to take in that exceedingly important field. There have been, as so often before, rumours that the German High Seas Fleet was on several days west of Heligoland. But even an excursion in force to the Dogger Bank hardly justifies its sonorous title, and certainly does not prove any intention to seek a general action. It is free to “come out” when it likes. For a certain radius, its action is not, and in modern conditions apparently cannot be, interfered with by the capital ships under either Sir John Jellicoe or Sir David Beatty. But it is a restricted chain that tethers it to Heligoland. It dare not get beyond the range of a safe run back to the mine-fields, unless it is willing to dare everything. If it could lure our faster squadrons into fighting on ground prepared by mines; where submarines are waiting; into which destroyer flotillas can be poured—a partial battle in conditions of German choosing—our enemy have always been ready to offer us. But it seems that we may wait for ever to the decisive fight.

There is a lull, whether intentional or not we cannot yet tell, in the submarine war. Only two ships have been attacked and sunk; two ships and a few trawlers. Has the American Note brought reflection to the Wilhelmstrasse? It is not impossible. Neutrals are becoming scarce. The pirate campaign has been in every sense a failure. No future success can compensate for the loss of reputation it has brought; for nothing short of seriously crippling British trade and food supplies is a success at all—and three months of brigandage have shown both these objects to be unattainable. And the submarines are wanted elsewhere. The Kaiser might intend to make an American virtue of a German necessity and call the whole thing off. He must do so sooner or later. It is not inconsistent with the facts that it has been called off already. It will take some time to give new orders to all the submarines. Many must be away on long-spell cruises in distant grounds—and their wireless is not good for more than one or two hundred miles. Even if piracy and murder were officially and publicly renounced—and nothing else can ensure the Americans keeping the peace—we should expect sporadic attacks to be made until all the U boats had returned within a communicating radius.

But for all the dearth of news, the week has been an eventful one. No eight days since August may, eventually, be found to have affected the naval aspect of the war more profoundly. Italy, possessing the most powerful of the neutral navies, has joined the Allies; and the supreme command of the British Navy has been taken out

of the hands of Mr. Churchill and Lord Fisher and confided to others.

It is no part of my duty here to discuss this exceedingly important event. But it is right that the public should be reminded of a thing which has been completely lost sight of, where it has not been misrepresented, in recent discussions. Much has been said of the splendid services and eminent talents of the veteran Admiral of the Fleet who has retired from the arduous office of chief naval member of the Board of Admiralty. Unfortunately, enthusiasm has carried many of his admirers far beyond the limits of useful appreciation. They injure the person they are trying to serve, and they imply that the British Navy, deprived of a particular leader, must lose much of its fighting value. This is grave injustice to flag officers who are now serving. To those who know anything of the professional estimate of the outstanding figures in the three Admiral lists nothing can appear more ludicrous than to suppose that there could be any serious difficulty in finding a competent First Sea Lord. If there were any difficulty, it would be limited to the embarrassment of those who had to choose the most worthy who could best be spared from other duties. That there are many worthy is obvious.

It is one of the most curious of our characteristics as a nation that while public curiosity has brought every other class into the glare of newspaper notoriety the officers of the Navy remain unknown. Accidental circumstances have familiarised us with a few names—all of men long since retired. Of the younger generation the reader of newspapers knows nothing. It looks, therefore, to some as if to pass the supreme command from a known to an unknown man were equivalent to exchanging the leadership of a genius for that of an incompetent. The sooner this delusion ends, the better for us all. The Navy has men of talent, knowledge, courage, and experience not only to fill all the commands, but to make at least two alternative Boards as well. It is no service to the nation or its Allies to speak as if this were not the case.

THE ITALIAN NAVY.

THE intervention of the Italian Navy should have a profound effect, not only in the Mediterranean but elsewhere. Its matériel consists of four Dreadnoughts completed before 1915, and two are due for completion this year, and, for all one knows to the contrary, may be completed already. These ships are armed with exceptionally heavy broadsides. The first four can bring no less than fifty-one 12-inch guns to bear in a fleet action. The last two add twenty-six more to the battle force. Of pre-Dreadnoughts there are ten of comparatively recent date, and some older and slower ships, for whom a value may be found. There is a certain number of protected cruisers, but the nominal speed of the fastest is only 22 knots. But there

are three very fast cruisers, and, besides, twenty submarines, forty destroyers, and sixty sea-going torpedo-boats.

One may assume that, in the first instance, the Italian Navy will take over from the French the task which the French Dreadnought squadron have so far discharged, that of holding the Adriatic against Austria. It may seem at first sight as if, now that the Italian arsenals and ports from Venice to Taranto have become available, that holding in the Austrian fleet should become greatly simplified. But it must be remembered that the whole Italian coast now becomes subject to Austrian attack. Indeed, it was attacked at certain places within an hour or two of the declaration of war. It follows, then, that Italy does not simply take over from France the task of holding the Adriatic, because it is no longer the same task. It will probably be highly desirable that some of the French units should join up with the Italian fleet to ensure that the display of strength shall be overwhelming. It is true that the Austrians, held so far by the French alone, have shown no greater anxiety to break out of the Adriatic than the Germans have shown to break out of the North Sea. And so long as the containing squadrons—whether purely Italian or purely French, as they are now, or Italian with French reinforcements, as one supposes it is likely to be—remain at their present strength, it might be supposed that the main units of the Austrian Navy would not disturb the naval situation. But Venice is very close to Pola, and the situation at Trieste is exceedingly critical. Circumstances may force one side or the other to force an action. And until this action is fought, it is unlikely that many of the capital ships, French or Italian, will be available in any other field.

But if any fleet action is brought on, two highly important results should follow. The events should be certain. The Allies ought to win. The Austrians should be no match for the Italians backed by a French squadron. But, as in Nelson's time, so now, nothing is sure in a fleet action. Torpedoes, mines, submarines—a lucky chance may make such changes in relative strength where the total numbers are so small. Still, the Allies have the reserves and the Austrians have none. They cannot be reinforced from Kiel or Cuxhaven. And if the Austrian Fleet is crippled or sunk, we should get a new force available for the North Sea. We can hardly be too strong there. It is not only a question of a general action. There is the risk of invasion against which our shores must still be guarded.

But, whatever the course of events in the Adriatic, it seems at any rate reasonable to suppose that Italy's destroyers and torpedo-boats should suffice for purely Adriatic needs, and consequently, that a considerable number of French destroyers should be freed for other fields. As I pointed out in these pages last week, by far the greatest naval anxiety that faces us at the moment is the threat which the German submarines hold over the allied fleet and transports at the Dardanelles. These are, after all, our army's only base, and there seems no other way of defending this base against submarines except to patrol it with the utmost vigour with flotillas of destroyers, as numerous, as fast, and as well handled as they can possibly be. If, then, Italy's destroyers and

sea-going torpedo-boats can relieve the French destroyers now in the Adriatic, these will form a reinforcement of the most vital possible kind. Highly important as the intervention of Italy must be in a military sense, if it results in securing the continued safety of our ships at the Straits and so ensures the success of the operations at the Dardanelles, this intervention may be decisive.

Although the Italian Navy had no ship-to-ship fighting in its war with Turkey over Tripoli, it is nevertheless to be remembered that the Italian Navy has had a very considerable and quite recent war experience. Numerous and prolonged bombardments were made of different towns on the coast, and, as at the Dardanelles, all the operations connected with the transport and disembarkation of the forces sent to Tripoli were directed by naval officers. And all these operations were carried through with the utmost professional skill and dash.

THE DARDANELLES.

It is rather a singular thing that, while we have had two official *communiqués* concerning the course of operations at the Dardanelles, neither of these make any mention whatever of the Navy's contribution to the operations. Of unofficial news there is enough and to spare, and most of it apparently utterly unreliable. There is something picturesque in the story of the Allies and the Turks fighting on the Isthmus of Bulair: the Turks supported by the *Goeben* in the Sea of Marmara, the Allies supported by the *Queen Elizabeth* in the Gulf of Saros. An aeroplane, it is said, was employed to mark the *Queen Elizabeth's* shots while she felt for the *Goeben* over the hill-tops. If a ship cruising about were hit by indirect fire it could only be the result of an absolute fluke.

The special correspondents who have watched the different attacks on Krithia speak of the terrific *apparent* effect of the shrapnel and lyddite from the ships' guns. But it is noticeable that the only direct hit made on the enemy's batteries that Sir Ian Hamilton alludes to was made by one of the howitzer batteries. One suspects that the truth of the matter is that the Turks and Germans have taken very good care to make their chief gun emplacements where none of the ships can get a direct aim at them, and a well-placed land battery would be far too small a mark to be hit by indirect fire. In these infantry engagements, therefore, the support of the ships' guns is of greater moral than military value.

SUBMARINES AND SPEED.

CERTAIN correspondents have written to ask me if I can explain in simple language exactly why it is that the speed of a ship is a protection against submarine attack. One correspondent points out to me that, if a submarine fires at a ship of the length of the *Lusitania*—the length being about 230 yards—it would be almost impossible to miss her, whatever her speed. No miscalculation either of the speed of the ship or of the speed of the torpedo would make much difference when the target was so large.

This would be perfectly true if the torpedo were being fired either from a destroyer or from a submarine lying on the surface, so that the officer in charge had an uninterrupted view of the target and could make a roughly correct estimate

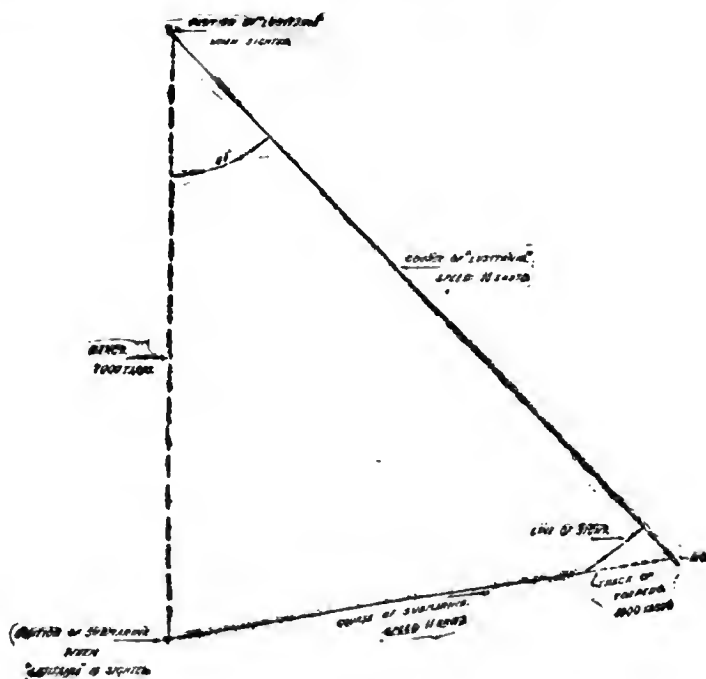


FIG. 1.

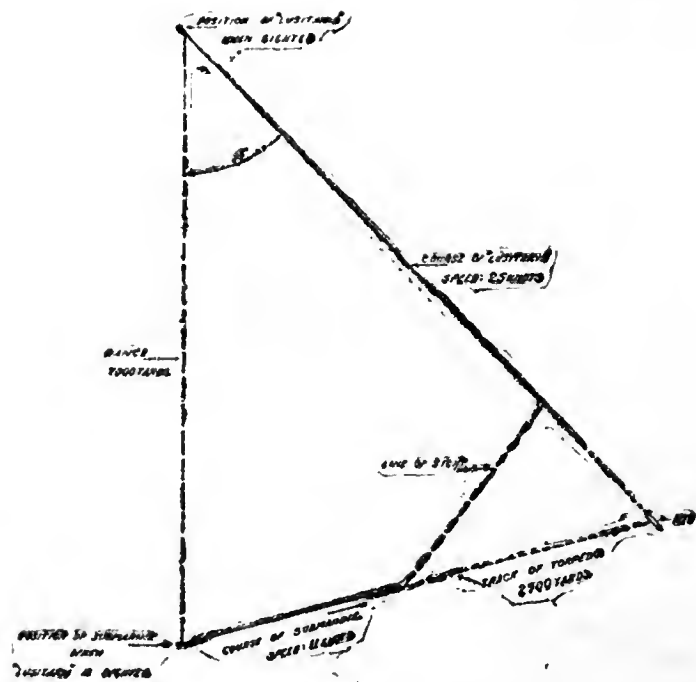


FIG. 2.

of the angle of her course and speed. But the making of these estimates becomes very much more difficult when the target is viewed through a periscope. Unless the water is perfectly smooth the view of the target cannot be continuous. In any case, visibility will be poor, and it will be exceedingly easy to make mistakes. So that even with a ship as long as the *Lusitania* speed adds very materially to the difficulty of hitting.

But the main protective quality of speed is not the difficulties added to hitting when within a thousand yards range, but the difficulties it puts in the way of the submarine getting to within a thousand yards. If the reader will look at the two diagrams, he will see that in Figure 1 the submarine is supposed to see the *Lusitania* at a distance of 7,000 yards, in this sense, that it is not until she has come within 7,000 yards that she is able to estimate the course she is on. He perceives that to get within a thousand yards he must take a certain course. It will be seen that,

proceeding under water at eleven knots, he *can* get within 1,000 yards of the *Lusitania*, so long as she is going at 18 knots. But, if, as in the second figure, the *Lusitania* is going 25 knots, he will not be able to get nearer than 2,900 yards before firing. It comes, then, to this. If submarines were placed five miles apart across a certain channel, no 18-knot ship whose course could be estimated by a submarine from a distance of 7,000 yards could get through this cordon without at least one of them being able to get a shot at her at a range of 1,000 yards less; but that a 25-knot ship could pass at an equal distance between any two of them and neither be able to get a shot at less than 3,000 yards. The risk, therefore, has been enormously reduced.

Speed is thus a double protection. It not only diminishes the chances of a favourably placed submarine making a hit—still more greatly it reduces the submarine's capacity to place itself favourably.

A GLIMPSE OF WAR. THE SNIPER.

By W. L. GEORGE.

SECOND-LIEUTENANT MARLOWES stared into the periscope. From time to time he shifted it a very little, so as to alter his field of vision. About him all was peace. It was morning and a pale sun, silvery rather than golden, made the moist air luminous. It had rained in the night, and every blade of grass carried on its tip a water jewel. In the trench some of the men slept; some wrote letters, while others, lazily puffing at pipes, read fortnight-old newspapers. And in the area he mirrored in the periscope all, too, was peace; across the ragged meadows a soft wind blew, curling the grass; a field-mouse scurried and startled him, for any movement now could shake the young man's nerves. Beyond that emptiness, beyond that silence, three hundred yards away, the Germans in their trenches skirted the wood, invisible and yet certain, silent, watchful, ever-present, ever-threatening. Marlowes heard a voice, the sergeant's: "Filling up again. Arie, go and dig that drain up a bit." He grew aware that a little water sloshed about his feet; no doubt the drainpipe was choked. He heard Arie's feet cloop in the mud; instinctively he dropped the periscope and turned. The big Wiltshireman came towards him, careless, hands in pockets, obedient, but

sulky. He stood well over six feet, and at once Marlowes grew taut; he lost his temper.

"You idiot!" he shouted. "Keep down your—"

But before he could finish the phrase he heard a shot. Arie took another step forward, then two uncertain little stumbles. For a moment he swayed on one leg, whirling his arms in the air. Then, with a long wet smack, he fell forward, shot just over the right ear.

A mad fury rose in the breast of the young second-lieutenant: "Two to-day! Fools! They do it on purpose," he thought. And he reflected: "Two on Tuesday, one on Wednesday; Thursday we lost three like that. Damned idiots! And this is the second this morning." He heard them dragging the body in the traverse; he thought no more of what had been Private Arie. All his faculties were concentrated on the sniper, somewhere in one of those trees, who had already cost his half-company eight men. As he stared into the periscope, striving to penetrate the green thickness of the leaves, he wondered about the sniper. He imagined him as some fat German shopkeeper who had made shooting into a hobby, who was very proud of the silver mugs and golden medals he had won on Sunday afternoons. Marlowes thought of the trophies; he swore. "It can't go on," he thought.

"Got to do something. Can't see the beggar." He tapped the mirror of the periscope angrily, as one taps the barometer to try and make the weather change. Evidently the fellow was in a tree, but which tree? There were quite twenty or thirty trees big enough and thick enough to hide a man. He stared; there was no movement, nothing; just then not even the wind stirred a leaf. Second-Lieutenant Marlowes's meditation became profound; he was a rather exquisite young man, and in other days made a living by deciphering hieroglyphs at the British Museum. He held a firm little chin in an agreeably manicured hand, but he stared no longer into the mirror; he now wore the air of abstraction that came to him when he had to decide whether a new inscription was of the period of Rameses I. or of that of Sesostris. Round him the men went on reading and smoking in the peace of life that is so near death.

It was a very long time later when Marlowes's face lit up, grew almost laughing. He signed to a man, half whispered. "Yes, sir," said the man, rather blankly.

"You quite understand? Melons if you like—anything of that sort."

"Yes, sir."

The half-company watched their officer at some very curious work. With his own manicured hands he drove two boards into the side of the trench; the first two feet from the ground, the second about five. Then he bored in each a mysterious hole, and passed through the two holes a still more incomprehensible stake. He did that again, some fifty yards further along. An excitement passed along the line, and the sergeant-major, who had not been in London for twenty years, murmured something about Maskelyne and Cooke. Conversations grew fervid; eyes followed, and discipline alone forbade questions. The war was forgotten. There was nothing of war in the air, only now and then the crack of a rifle, far away on the right or left, and the rumble, so distant as to be only the ordinary accompaniment of life, of the French artillery some seven or eight miles to the north. Marlowes, sitting by the side of his apparatus, looked irritatingly like the sphinx.

The feeling in the trench grew tense. A man was speaking to Marlowes, offering him two large, very dirty objects. "The best I could do, sir," said the man. "You see, sir, I didn't know the French for melon."

"Oh, this'll do very well," said Marlowes, fingering the earthy lumps. "What are they? Big potatoes?"

The private smiled. "No, sir; they call 'em swedes."

"Ah!" said Marlowes. "I'll remember that. But now for some fun."

The whole half-company stared. Even the sentries grew negligent and went unproved, for the sergeants, too, could not keep their eyes away from the extraordinary picture of their officer, who was impaling the swedes upon the stakes and moving these up and down through the holes in the boards. They were beginning to understand. Then, as Marlowes stuck upon the first big vegetable a forage cap, they gasped. With infinite caution, hugging the wall, Marlowes raised the stake and its burden in the air so that no more than a moving gleam of khaki cloth could be seen over the edge of the trench.

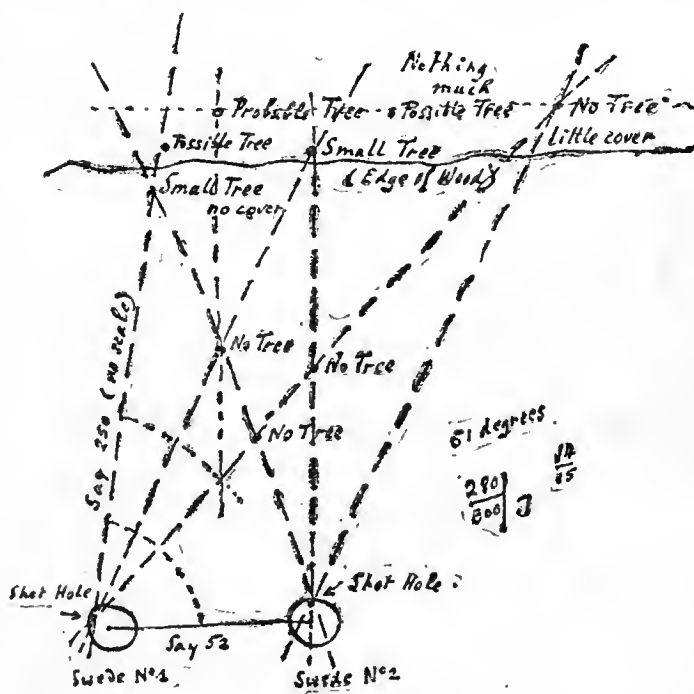
The sergeant-major sneered. "He's fashing himself a lot to draw their fire."

Marlowes raised the stake a little higher. There was a sharp crack. A quiver went through him as if he were holding that stake very hard. The forage cap descended; there was a hole on the extreme left of the swede.

"Sergeant," said the officer, "see that nobody touches that."

Half an hour later, at the second point, it was a cap that rose above the other swede. The sniper was waiting, it seemed, for as soon as it rose the crack came and the bullet, boring through the centre of the swede, buried itself in the further wall. A suspicion ran through the trench that in this was something odd, that the strange young man with the dandy air was plotting. But what? In that minute from end to end the question was whispered, "What's he up to?" And the mystery became still more mysterious, for Second-Lieutenant Marlowes, after measuring the distance between the two stakes with strange accuracy, sat upon the ground, a piece of paper between his feet which he decorated with the most incomprehensible lines. They radiated, intersected, producing points which Marlowes, after a stare through the periscope, marked "No tree." There were figures, too, things that looked like division sums, and three words, "fifty-one degrees." At last the young officer made at the intersection of two lines a convincing dot. Periscope in hand, he rose to his feet; he stared a very long time; he fumbled with strips of paper held at varying angles. At last he exclaimed

sharply. Near the intersection of the line made by the bullet which had struck the first swede on the extreme left



The Peculiar Diagram

with the direction of the bullet embedded in the centre of the second swede stood a tree, a low, very leafy oak. And there was no mistaking it; over to the right were three or four small oak trees that offered no cover, and on the left was nothing for four or five yards. Marlowes gazed at his tree, his heart beating with ghoulish delight. "So," he thought, "that's where you are!" For a minute or two he examined the tree. There was no movement in the leaves, nothing to show that it hid watchful eyes and unerring hands. Without motion, without life, it was sinister; it was like tall grass in which lurks a snake, nimble, able and anxious to strike.

Within half an hour Marlowe, having obtained from his captain relief at the price of a confidence which made his senior scoff, cautiously groped along the wall of a ruined farmhouse, half a mile beyond the lines. Near by two men noiselessly erected a machine gun. They hugged the wall, all of them, and the muzzle of the gun slid forward by imperceptible degrees until it slewed round the corner of broken brick. The young man's heart was beating with excitement, and as he sighted the gun his hands caressed the black barrel as if he loved it. Three times he checked the direction, then drew back. "Now!" he whispered. There was a click. Then for half a minute a series of rasps, of sharp explosions that deafened him, so near were they, as the maxim spat out its two hundred and fifty bullets into the distant leaf. He watched it, fascinated by its quick, purposeful action, the regular unwinding of the cartridge band. He stopped it, re-sighted, and then, for a minute, to various points, playing as from a hose, bullet after bullet went forth. To make sure, he put a few volleys into the "possible trees." Through his field-glass he saw leaves fly into the air as feathers from a wounded pheasant.

It was two days later, just after dawn. A grey drizzle fell slowly into the field, now no longer green, but all trampled and shell-torn, black wherever the exposed earth was sodden with rain. Before Marlowes lay the wood, from which he could hear English voices as his men dug themselves in. The German trench was in their hands, and feverishly they were making ready for the counter-attack. He was busy; the parapet had to be rebuilt, and that swiftly, but a burning desire filled his heart. He had to see, he must see. He took a step away, then returned, half-ashamed, as if he were deserting. But no, he could not bear it. He must see. He ran along the trench. He climbed out, ran crouching among the trees, leaping over trunks that had been smashed by shell. Suddenly he stopped. Here it was, the lonely oak tree. He looked up, he could not see very well. But dawn was breaking, and suddenly it came up rosy through the branches. Touched here and there with tender mauve, its face glowing in the first rays of the sun, something grey and torn hung quite stiff, caught by one foot between two branches. For a moment Marlowes watched it, hanging there so quiet. He felt touched with pity. Then pity fled and he reproached himself: "That's what comes," he thought, "of being scientific."

THE SOUL OF ITALY.

By GUGLIELMO EMANUEL.

London Correspondent of the "Corriere della Sera."

THE soul of Italy is aflame.

Italy, entering on the war, sees in it for her a war of liberation and defence; liberation of her lands and her sons from the domination of an alien race; defence against the menace to all the Latin peoples, which would be the permanent outcome of a German victory. Not only is Italy fighting to free those Italians who alone of all Austrian subjects were denied the sacred right of their nationality, but she is fighting to defend what Italy is now, what Italy possesses already, from the danger of a Teutonic hegemony.

Serbia had been attacked—and Russia through her; France had been assailed and England menaced when the land frontier of Belgium was invaded by the German hordes. But it would be childish to consider as defensive wars only those conflicts in which the enemy suddenly invades the territory of a country. Defensive wars are all that are waged in defence of threatened freedom, and the threat against Italian independence has been urgent and continuous from the day in which Italy entered the Triple Alliance. That unfortunate pact has never been rightly understood in this country; for Italy it was the only way to postpone the inevitable attack from Austria. Prince Bülow himself in his memoirs has clearly stated the problem in admitting that "Italy and Austria can only be allies or enemies." Just because Italy could not afford to be the open enemy of the Dual Monarchy, she had to accept the position of an ally. For more than three decades Italy lived in the dread of an ally in whom she plainly saw an enemy; defence had to be discreet as it was permanent, under the perennial veiled threat. Austria openly and insolently made armed preparations on the Italian north-eastern frontier, coldly calculating that it was—together with the persistent suppression of Italian nationality among her subjects—the best way to cow Italy into submission and renunciation of her dream of complete national unity. It was quite clear that the Hapsburg Monarchy was not simply taking excusable measures of preparation against the time that her neighbour should grow tired of subjection. Austria was in reality preparing to attack Italy when the opportunity should be favourable. The strange thing about the Triple Alliance was this, that it had already ceased to guarantee that security from an Austrian menace for which alone we had entered the compact. Twice, though we had not offered to Austria any cause of offence, Italy had been in immediate danger of invasion by her ally: once when the country was visited by one of the greatest disasters that ever befell a country, the Messina earthquake; the second time when the young kingdom was engaged in the Tripoli campaign. It is no exaggeration to say that at every moment Italy was open to attack, because she had not those strategic frontiers on the Alps and the Adriatic which the present war is going to assure her.

Behind Austria was the mighty danger of Germany. The march on Salonica through Serbia not only spelt the end of the free Balkan nationalities, but also meant that Italy should become in the Mediterranean what she was already in the Adriatic, the humble servant of the Teutonic powers.

Such was the situation when the ultimatum launched against Serbia plunged Europe into the greatest war that the world has known. Italy could not be asked to fight on the side of Germany and Austria to help her own further subjugation and accomplish her own final downfall. Not even the stolid, unimaginative German could advance such a pretence. Italian neutrality was proclaimed and accepted by her allies. But that eventful day made an empty formula of the Triple Alliance, and prepared the way for the participation of Italy in the war on the side of the nations fighting for freedom and right.

Neutrality has lasted nine months. They were not wasted months. It is no longer a secret that last August Italian military preparations were not such as to allow her to enter the field with reasonable chances of success. Those adventurous spirits who immediately understood the call of destiny had to wait patiently for her workshops and arsenals to pile up the arms which were sorely needed. The outbreak of war had caught Italy just while she was in the process of renewing her artillery armament; to rush into hostilities before such all-important business had been completed would have been sheer madness. But the long vigil

has been a blessing, because during the suspense the national consciousness has developed, and every hour has afforded new reasons why the Italian people should enter the fray with an invincible purpose.

From the purely national problem of accomplishing the final unity of the country, and conquering her natural frontiers on land and sea, the people has been slowly but surely brought to consider another aspect of the struggle: the human—or inhuman—aspect. In this Italy has been helped by the way Germany has chosen to wage war. The Latin soul has been shocked and revolted by the ruthless devastation of Belgium, by the systematic frightfulness of the German armies, by the slaughter of non-combatants on board the *Lusitania*, and the unscrupulous use of poison gases blown against a most chivalrous opponent.

It is just because Italy knows now what a modern war means—and nobody of those who were involved in it last August knew—it is just because she does not ignore the cost, the sacrifices, the appalling losses she is going to incur, that her decision is equivalent to national regeneration.

The resolve to fight has been maturing slowly but deeply in the conscience of the Italian masses, who visualised what a German hegemony over Europe would mean. Even among the most simple of Italian peasants, as among the fiery nationalists, the aim of Italy became twofold; not only was war necessary to make Italy greater, but to make her greater in a better Europe, where such horrors would be made impossible, and a more just, more human order of things would be inaugurated.

One could not gauge this deep working in the people's soul in term of numbers or of Parliamentary majorities. German and Austrian diplomatists, of course, were quite unable, for psychological reasons, to understand the strong and ever-increasing determination of the Italian people to share in the great defence of civilisation against barbarism. But, happily, the Italian Government of Signor Salandra—probably the most national and representative one that the kingdom ever had from the days of the Risorgimento—was quite alive to the real feelings of the country.

And the people felt sure, by their wonderful prophetic instinct, that the Cabinet was in accord with them, and worthy of the honour and the responsibility of leading the nation in this supreme hour. The spiritual preparation for the sacrifice was going on unobserved, perhaps unconsciously, all those long months of vigil. Now the decision is irrevocable, and the conviction from which it arises lends it a sort of religious exaltation.

All the events of the last two weeks, from the day in which Italy's poet, after five years of voluntary exile, came back to clarify the dawn of a new Italy, to the day when two hundred thousand people marched to the Quirinal after Parliament had sanctioned war, were marked not only by enthusiasm but also by a kind of vivid romantic glow. Every assertion of Italian feeling was marked by expressions of singular beauty. There was nothing prearranged or organised in the demonstrations, with the exception of the Quarto celebrations, but a sort of ritual full of subtle meanings was unconsciously created every time the crowd gathered—a natural outcome of the stirring of the national soul.

When the processions started, very often they were preceded by wagons laden with garlands which the citizens took to hang as votive offerings before the statues of the illustrious dead who gave their lives to the making of Italy; it was very like a propitiatory ceremony of ancient Rome, but nobody thought of this, for it was utterly spontaneous.

Surely it has been fortunate that Italy should have found the voice of a supreme poet like D'Annunzio to express the emotions of the nation in those days of spiritual militia, when every citizen felt himself a soldier even before the war. The mob was moved by his eloquence, from the roughest of navvies that acclaimed him when he reached the first Italian frontier town, to the crowds who begged for speeches from him, in Turin, in Genoa, in Rome, every day, and would not be satisfied. There is something august in this adoration of a whole people for the man who more than any other has the gift of creating noble words—fit to celebrate noble deeds; surely this recognition of the creative energy of poetry is a testimony to the pure motives of the Italian people in entering this war. All the country is aflame for *la bella guerra*.

BOMBS USED BY AIRCRAFT.

By L. BLIN DESBLEDS.

SINCE the outbreak of hostilities bombs have been dropped, almost daily, from aircraft on railway junctions and stations, trenches, batteries, food and ammunition depôts, reinforcement convoys, engineering works and workshops, shipyards, warships and submarines, military, naval, and aerial bases, defended and undefended towns and villages, and, in most cases, the bombs have had a considerable destructive effect. In view of the success which has attended the numerous offensive uses to which aircraft have already been put, it is very difficult, if not impossible, to understand why they are not, for offensive operations, used on a really comprehensive and sustained scale.

To the demand for more shrapnel and explosive shells for our field batteries should be added another plea, just as earnest and every bit as pressing, for bombs for our aircraft. In fact, it should be ever kept in mind that we have already in the aeroplane and in the airship the equivalent to guns of 150 and 300 miles range respectively.

For obvious reasons the writer cannot deal with all the aerial bombs that have been proposed or used. In the first place, the number of air bombs that has already been invented and patented is so large that they would require, for even their briefest description, a volume rather than an article. Also, the fact that some of those bombs which have been a subject for the inspiration of our inventors, and some of which inventions are of really great worth, precludes any description being given which may prove of value to the enemy. For these two reasons the writer will confine the greater part of his article to the German aerial bombs.

Bombs employed by aircraft may be divided into two great classes: (i.) the *explosive*, and (ii.) the *incendiary* bomb.

The Explosive Aerial Bomb.

The explosive aerial bomb may belong to one of two categories: (i.) It may be designed with a view to being dropped from the aircraft with no initial velocity of its own; or (ii.) it may have provision for being propelled with a high initial velocity of the order of that of a bullet leaving the muzzle of a gun.

Explosive aerial bombs of the first kind are generally very simple in construction. They are nearly all of the type illustrated by the sketch shown in Fig. 1, which represents the cross section of an aerial bomb greatly in favour with the enemy.

An examination of the sketch shows that the aerial bomb consists of a hollow vessel *V* made of iron. This vessel, which is somewhat pear-shaped and is open at its top, constitutes the bomb proper.

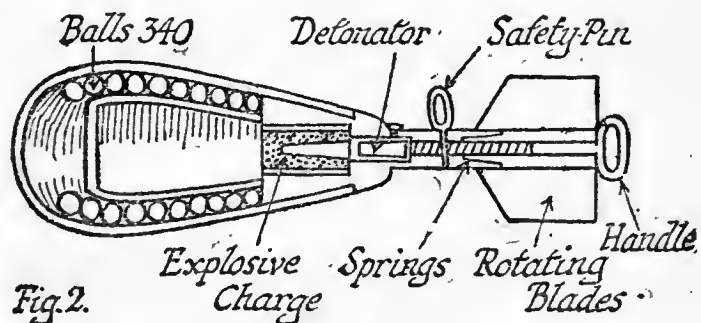
Through the open top of the hollow pear-shaped iron bomb is screwed a detonating device to the upper part of which are fixed four small metal wings which are slightly inclined to the vertical axis of the bomb, and which, in effect, constitute a small aerial propeller. When the bomb is dropped the pressure of the air on these small wings, or blades, causes the bomb to rotate at a great speed, with the result that the bomb is not very greatly affected by the wind and keeps its downward course fairly well. Another important function of these blades is explained a little further on. Two of these blades, marked *C C*, are shown in the sectional sketch.

The four blades which impart a rotation to the bomb are protected from injury by means of a number of stout steel wires, *W*, curved round them. In some models of aerial bombs these steel wires are absent, and the bomb is carried by means of a handle, as shown in Fig. 2.

The sketch shown in Fig. 1 can also be used to explain the working of an aerial bomb. The pointed portion, marked *P*, is the one which causes the percussion. It is kept, by means of a spring, *S*, at some distance above the capsule, *A*, which, when struck by the percussion point, *P*, sets fire to the detonator, *D*, the inflammation of which causes the principal charge, *E*, to explode, with the result that the

body, *V*, of the bomb is burst into many pieces, which are scattered with great force.

It will be easily understood that the handling of an aerial bomb, such as the one which has been described, would be a very dangerous operation, were it not possible to ensure that the pin, *P*, would not accidentally strike against the detonating cap, *A*. The object of the spring, *S*, is to keep the percussion pin, *P*, away from the detonating cap *A*. To make sure that no accidental shock will cause the spring *S* to move down, there is a hole, *H*, through the axis, *M*, to which



SECTIONAL SKETCH OF SHRAPNEL BOMB.

the blades, *C C*, are attached. Through that hole, *H*, a pin, *F*, is passed, and so long as the pin, *F*, is through the hole, *H*, the axis, *M*, which is screwed, at *B*, on to the percussion pin, cannot move down. The presence of the pin, *F*, therefore, ensures that it is impossible for the detonating cap, *A*, to be struck by the percussion pin, *P*.

At the moment of dropping the bomb the safety pin, *F*, is removed.

As soon as the bomb begins to fall the action of the air causes the small four-bladed aerial screw, *C C*, to rotate. This rotation unscrews the axis, *B*, and sets free the percussion point, *P*, which, being rectangular, and placed in a rectangular hole, *G*, cannot rotate.

When the bomb hits the ground or the aimed object, the shock causes the point, *P*, to strike against the detonating cap, *A*, thereby causing the explosive charge, *E*, to explode and the bomb to burst.

The Shrapnel Aerial Bomb.

The bomb shown in section in Fig. 2 works on the same principle as the one already described. It contains 340 steel balls and is, in truth, a sort of shrapnel.

The employment of this type of explosive aerial bomb is especially effective against troops in close formation, as is usually the case, for instance, of troops held in reserve a short distance behind the firing line.

When the explosive charge is fired the parts of the shrapnel aerial bomb, as well as the bullets it contains, fly radially in all directions with considerable force.

The two kinds of bombs already described are made of various sizes and are used both on aeroplanes and on airships. They are either dropped by hand or by means of an apparatus called a "bomb-dropper."

Some of the bombs which the Germans dropped during the aerial bombardment of Antwerp by the Zeppelin airships differed from the preceding ones both in shape and in construction.

They were not pear-shaped, but circular. They were made up of three distinct circular shells inside one another. These three shells were soldered at various places with brass soldering with a view, probably, to causing three pieces of shell to fly off from each bursting-point.

A number of rivets went through the three shells. These rivets had circular heads, which pressed against the inner surface of the innermost shell. They were 0.58in. in diameter and were placed 0.72in. apart. These bombs were provided with a number of percussion needles, and at least one of them was expected to act and set fire to the explosive charge in the inmost shell whatever might be the manner in which the bomb dropped.

Several of the shells which were dropped on Antwerp did not, however, explode, and this is how it has come to pass that the construction of the Zeppelin Antwerp bombs is no longer a secret of the German War Office.

The Aerial Torpedo: A Short History With a Moral

The writer understands that, towards the end of 1907, an aerial torpedo was submitted to our authorities. How it was dealt with by our officials the writer does not pretend to know; but what is clear is that the British Government did not consider it worth while troubling about. Had our Government acquired the Unge's patent, it is very likely that the Germans would have been deprived of the possibility of arming their aircraft with aerial torpedoes.

The Unge's aerial torpedo is the invention of Colonel Unge, of the Swedish Army, and the secret of it was carefully kept.

In the beginning of 1908 the "Mars Gesellschaft" acquired the rights of manufacturing the Unge's aerial torpedo, and, a few months afterwards, sold them to the Krupp Company.

In 1909 one hundred Unge aerial torpedoes were built in Stockholm and despatched to Essen for experimental purposes. It was announced at the time that these aerial torpedoes had an initial speed of 164 ft./sec., which increased up to 984 ft./sec. during its flight of 2.79 miles.

Since then, and up to the time of the outbreak of hostilities, there is, so far as the writer is aware, no mention made of the aerial torpedo. But is it not probable that it is Unge's invention which Krupp's have now developed for the German Government?

The moral which the writer would like to draw from the preceding lines—and he does it with a full knowledge of what he is saying—is that the newly-organised Government should not forget the great need of strengthening the staff to which, at the Admiralty or at the War Office, is entrusted the extremely responsible duty of examining new ideas and new inventions concerning aeronautics.

Description of the Aerial Torpedo.

The shape of the aerial torpedo, as can be seen from the sketch (Fig. 3), is a cylinder, against one extremity of which rests a cone.

The aerial torpedo consists of three distinct parts. In front there is the explosive portion, which is provided with a conical apex with a detonator and which contains a powerful explosive; then comes a cylindrical portion of the torpedo, which is fitted with some powder of such a composition that, when ignited, it does not burn with any flame, but produces

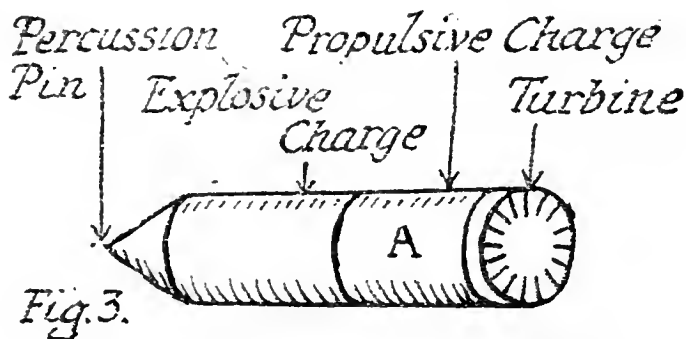


FIG. 3. DIAGRAMMATIC SKETCH OF AERIAL TORPEDO.

during its combustion a great quantity of gas and of smoke; and, lastly, at its rear extremity there is a small turbine. The aerial torpedo is fired from a torpedo tube which is mounted on a support with a universal joint, so that it may be pointed in any required direction.

By means of an electric spark the propulsive charge is ignited, and the gases emanating from the ignition of the propulsive charge escape at the rear of the torpedo, causing the propulsion of the aerial torpedo by the working of the small turbine.

Besides having a great speed given to it by the turbine, the aerial torpedo has also a considerable speed of rotation which enables it to keep well within its trajectory.

The writer hopes to be able to deal with the incendiary and the anti-submarine aerial bomb in a subsequent article.

HIGH EXPLOSIVE SHELLS.

By COLONEL F. N. MAUDE, C.B.

THE whole trouble with regard to high explosive shells originates in the fact that the British nation has always refused to believe in the possibility of a struggle for existence on the present scale, and continued its disbelief up to August 4, 1914, if not beyond, and has never been willing to accept the risks which are inseparable from a due preparation for such an occurrence.

High explosive shells came first into importance about 1885, when we learnt of some terrible accidents, both in France and Germany, arising from experiments with new explosives, to be used as bursting charges instead of the old black powder with which common shell had up to then been filled. These accidents made people nervous.

I happened to be in Germany, staying with some German "comrades"—as we used to call one another in those days—when some very important experiments were made with these new projectiles against a target fort, copied full size from the works then being erected by the French between Toul and Verdun. My hosts made no secret about the matter, though they begged me to keep away from the practice ranges in order to avoid unpleasantness for them. All day long I heard the explosions, which were very different in note from those to which Shoeburyness and India had accustomed me, and in the evening I was told about everything that had happened and been done. It was impossible to mistake the tremendous impression made upon all who took part in or had merely observed the experiments.

The target fort had been practically razed to the ground, and they all believed that when war came—owing to certain frontier incidents, it seemed very near at the time—they would be able to surprise and demolish the French frontier defences when and where they pleased, exactly as they have in fact since destroyed those of Liège, Namur, Maubeuge, and other places. I also learnt that the same explosives were being used in field guns as well—a point of importance in the present case.

Returning to England, I placed my information with the proper authorities, who knew all about the explosives used,

but could not find a satisfactory fuse with which to ensure "detonation."

For years I wrote about the matter in technical papers, and worried every artillery officer of my acquaintance as to the need for considering it. All the response I could get was that every attempt to devise a reliable fuse had so far failed. That this was true enough was made clear in South Africa, where our high explosive shells most signally failed to come up to expectations.

One of the highest authorities of his day ultimately told me that the real secret of the delays and failures lay in the dangerous nature of the experiments. They could get the lyddite to detonate perfectly, but only by using a proportion of fulminate which made the handling of the shells exceedingly dangerous. Should a serious accident occur from this cause—say, the explosion of a limber-box in transit by railway or on board ship—such difficulties might be raised by the owners, the civil authorities, and the public as to paralyse troop movements entirely in time of peace.

How the French, German, Austrian, and Russian gunners managed to transport these particular shells with safety we did not know then. But as the high explosive shell then existed in our service for field artillery, and as in view of the battle-work of the future common to all armies shrapnel was undoubtedly the better "man-killer," our artillerymen were perfectly justified in deciding to retain this latter as the principal projectile for field service.

It was only after the "Immortal" 7th Division had brought about a complete change in the character of the war, through saving the whole situation by their heroic resistance in the great gap of Ypres, that the demand for high explosives became urgent. Even then the extraordinary and wholly unprecedented quantities that would be required could not in reason have been foreseen. And no one who is not intimately acquainted with the whole machinery of ordering shells, laying down and increasing the necessary new plant, &c., &c., can possibly have any idea of the magnitude of the strain which was thus thrown upon our resources.



CANADA.

YPRES, April 22-24, 1915.

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I SAT beneath the great dome of St. Paul's, and all about me gathered the people who had come to do homage to Canada's dead. Statesmen, men of high place, Admirals of the Fleet, generals of division, soldiers from the field, Royal ladies, Sisters of Mercy, and women and girls from the factory and the shop—they came, an endless throng, to pay their tribute to the fallen. Canadians in the flush and vigour of health had come from their camps; and from the hospitals, with shattered bodies and crippled limbs, came the wounded and the broken.

Fathers, whose hopes lay buried in the grave; mothers, whose only sons had been taken; brides widowed in their bloom, met together to share their grief. And the high and low, the great and the humble, the strong and the weak, the bereaved and the anxious and the distressed, in that solemn hour stood side by side as members of one great family, sharing a common fealty to each other, to their country, and to their King.

* * *

The glorious music rose and fell, and rose again, as if it would say: "Honour the brave, chant for the dead! Exalt them who pass to their reward!" and organ and drums, and

brasses and cymbals, and pipes and reeds and strings, thundered and rolled and sang in a mighty unison step, the symbols of their faith borne in front of them, passed the long procession of choir and priests and bishops. The music faltered, hushed and died, and the solemn ritual began.

Glory of music rose and beauty of words, homage of people and tribute of King! How shall these comfort us?—for they, our beloved, are dead. They are gone, in the fulness of their strength, and their hopes and their dreams are lying in the dust. For them the promise of the years is not, and in all the days to come we shall know them no more.

"He that believeth in Me, though he were dead, yet shall he live."

Oh, stricken father, lift up your head! The son of your youth has passed beyond our mortal vision, yet still he lives and presses forward the banner of his Lord.

* * *

But our hearts are heavy. In the morning and in the night they are tortured and cry out, remembering how, though our love stretched out its arms, it could not reach nor

succour, as, in blood and agony, they, the brave, went from the light and sweetness of life to the silence of their lonely graves.

*"Though I walk through the valley of the shadow of death,
Thou art with me."*

Take comfort, poor widowed girl and desolate mother. They were not left alone. Love, greater than yours, upheld them, and around them was the everlasting mercy.

* * *

Sorrow multiplies on sorrow! To-day and to-morrow the weight of our woe increases and the earth groans with our anguish. We remember the land across the sea where, even to the borders of another sea, they weep with us for those who will not come again. And to what end? To what end do we bear the burden that presses upon us? For what avails valour and glory and conquest if these our sons are slain?

"Blest are the departed who in the Lord are sleeping. They rest from their labours and their works do follow them."

Oh, sorrowing souls, look up! Not alone for valour and glory, for country and King were the lives laid down. It is the battle of Christ we fight! That His message of mercy and love might be preserved to a stricken world, they, your gallant ones, endured and agonised and died! Rise up! With streaming eyes but steadfast hearts, rise up, and leave them, the consecrated, in their Father's gracious keeping.

Through the vast cathedral poured the sonorous measures

of the Dead March. Wave upon wave it soared to the distant arches and echoed about the tombs of the mighty dead. The piercing call of the "Last Post" shrilled out, and in the pause we seemed to hear the cry come back: "Yea, we are here, we, whose bodies lie around you! We, who of old fought and died that you who came after might enter into your heritage. Sons of our sons, keep faith." Surely they thrilled, those spirits of the departed, when we lifted up our voices and hailed you: "Oh, Canada!" land of our birth, young mother of brave men. And surely they rejoiced, the glorious company of soldiers, saints, and martyrs, as we sang anew our fathers' song, our battle cry of old: "For Christ and King."

* * *

Oh, men of Canada, true descendants of the race which bred you, well have you proved your right to sing that song. The sacred love of altar and of throne flames in you as it flamed in your fathers before you. And against it the legions of fear and torment and death hurl themselves in vain. And behind your steadfast fortitude, as behind a rampart, your people stand and look forward unafraid. For they know that the loyalty and the faith and the honour of their country, and all that they cherish and hold dear, are safe in your hands.

ELEANOR McLAREN BROWN.

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the CANADIAN GAZETTE.*

A DAY WITH THE FRENCH AMBULANCE SERVICE

GOOD news flies fast, even when it is not true. It must have been long before the attack had begun that the rumour reached us at Montdidier that the French had carried a strongly entrenched position at Andechy. We received no orders then and there, but we were told to be ready early next day and to set out with every available car. All that night at intervals we heard the prolonged roll of distant guns. The morning was cold and clear and brilliant, a day in harmony with news of victory and the excitement which the prospect of fresh work brought to us, whose routine had been for weeks to ply between hospital and station, station and hospital, to wait and loaf about far behind the line in case we should be wanted. We knew that the capture of Andechy meant that the Germans would have to fall back some miles; back, in fact, to some such position as they at present occupy at this part of the line, one far nearer Roye than Montdidier. We knew it must have been a tough piece of work and that the casualties must be heavy, for not only our cars but those of the American hospital had all been ordered out to supplement the Service de Santé. The road was running with water as we swished across the high open plateau and on down into the woods below. The woods, all glittering wet, were full of soldiers; red breeches and blue coats could be seen everywhere moving about in between the bare poles of the undergrowth, and the smoke of wood fires rose and curled among the trees. Some of the men were dragging branches to throw on the flames, others were drying their clothes, flapping them in the smoke; some were lying, huddled up or stretched out, asleep upon the dead leaves. By the roadside a group of officers were munching their breakfast, with maps upon their knees, and here and there a horse was tethered to a tree. There seemed to be a gaiety and animation in the scene which freed the spirits. It was a fresh side of war to us, a very different one from the wards of hospitals, or the sheds and offices of railway stations, where men lay upon floors bandaged and inert, or sat disconsolate in rows, their arms in slings, with pink tickets tied on to their buttons, waiting, interminably waiting, to be hoisted into trains. But these soldiers did not hail us demonstratively, as those going into action invariably hailed us. On the contrary, they stared gravely at us as we passed; all except an Arab, turbaned and white-robed, with a high yellow forehead and the face of a laughing philosopher, who was driving a hooded waggon packed with loaves; he grinned at us with all his teeth and called out "Ingleesh."

Presently we stopped to ask the way to Warsy of a bespattered cyclist, and from him we learnt that the troops in the woods were not men resting after a victory, but survivors who had lost half their comrades in a gallant but unsuccessful attack. It had been a terrible affair. There was distress in his expression. "But we will drive the grey moles out next time," he said as he hopped on his machine again.

Warsy was almost axle deep in slush and full of soldiers. Soldiers were beating linen under the arch of the well where the women used to do the village washing; they sat in rows along the churchyard wall, and stood about listlessly in groups. Perhaps their listlessness sprang from that relief at having come out of danger, which is really an intense form of living, making a man content with the stone he touches or the sight of the sky and the grass, and mere nearness to another human being a deep kind of satisfying intercourse. The wounded had been taken to two places in Warsy, the château and the church, but it was only in the château that there were surgical appliances; the floor of the church had only been cleared and straw put down for the wounded to lie on until they could be taken away. We went to the château first.

The side of war that the surgeon or the Red Cross worker sees is the side which the imagination is most reluctant to contemplate. In well-appointed hospitals the proofs on every side that everything that it is possible for human skill to do is being done is extraordinarily quieting both to the onlooker's distress and to the wounded themselves; but in such places as these so little is possible. The salon of the château had been hurriedly turned into an operating room. The pictures, books, and ornaments were as their owners had left them. The grand piano served as a second dressing-table. Several cars were quickly filled up here with wounded, some of whom it would have been better not to move, but room had to be made for more desperate cases. The rest of our cars went round to the church. It was a large church, and the floor of it was covered with wounded men, up to the altar. Some seemed too exhausted to care, some were propped up, sitting against the walls, some were frightened about themselves, as well as in pain, some were smoking cigarettes, some were sleeping, some were dead. It took many journeys to empty. When night came the huge, shadowy place was lit by the little flames, no bigger than a penknife, of votive candles; and with the dark the guns began again. It might be thought that such scenes of distress must shake the nerves, at least of men who know that to-morrow or the day after they may also be among the victims. But it seems in the magnitude of the disaster there is something which steadies. Into each man is borne a sense of his own insignificance. The clearing hospital at Montdidier Station, where the cases were taken and swiftly examined and distributed, some to go by train, some to remain in the hospitals in the town, was crowded to overflowing. At one time there were more than thirteen hundred wounded there. They lay side by side in the lean-to shelters of tarpaulin as close together as men sleeping in tent. There had been engagements at other points on the line, and the cars had been bringing them in from all sides. Yet in twenty-four hours it, too, was once again quite empty. The French organisation is certainly very prompt in emergencies.

DESMOND MACCARTHY.

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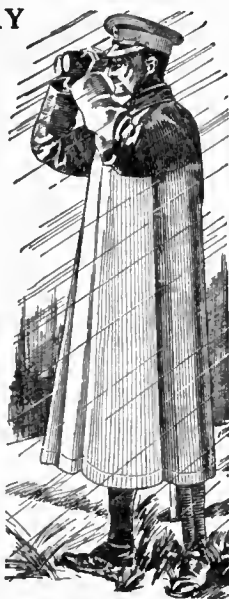
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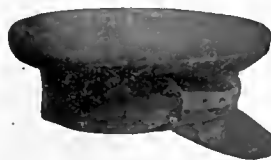


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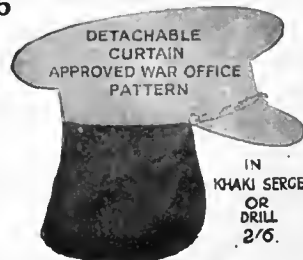
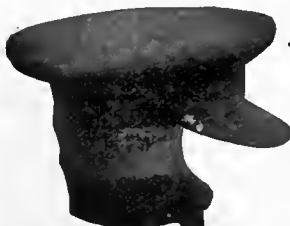
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WINGARNIS



IN the usual order of things and in the accepted phrase, the London Season would now have been at its height. Debutante daughters would have been first presented, or going in the near future to make their curtsy at Court. The Opera House would have opened its great doors, Ascot house parties have been arranged, Hurlingham attracting its gay throng, and showing good polo. As it is, most of the old landmarks of the Season have disappeared, and even those which exist have a very different countenance from that of years past. There is an influence underlying them all, breathing aloud the fact that we are chin-deep in the greatest of all wars. Things that are the same are yet not the same, indeed one doubts if they can ever be the same again, with the war's steady influence finding its way into every home, and always leaving its indelible mark.

The Academy is a case in point. It is amongst the landmarks that remain, and we, being a conservative race, gratefully recognize it as such. It is nothing short of a relief to turn aside out of the traffic, away from sensational newspaper bills into the quiet courtyard of Burlington House, and mount the short flight of stairs into the Central Hall. For it is the same Academy, to all intents and purposes, that we used to visit in the days gone by, before destruction raged loose in the world. The same, and yet is it the same? Apart from the war pictures with their obviously topical interest, in other respects it is not. There are numbers of visitors in black, there are many with that strained look of anxiety on their faces to which we have grown sadly accustomed. There is the picture of two great white oxen, called "Ploughing." It is by F. E. F. Crisp, the Academy student of great promise, who will never use palette or brush again. There is Lavery's fine London Hospital picture with its sense of broken men, yet its wonderful atmosphere of cheer. Old landmark though the Academy is, and one of the last left to us, it is yet a landmark with a difference.

The World at Large

London is full, quite as full as it ever is at this time of year. The superficial observer with no knowledge that social engagements in the ordinary sense of the word have ceased to exist might be excused for thinking that things are going much as usual. Any morning in Bond Street, the all too-narrow thoroughfare is full of people driving and people on foot. The Park has lost its deserted look, the restaurants are full, and so are the theatres whose productions have caught the public taste. And yet, though outwardly things may appear the same, everybody's inner life is changed as by an avalanche. Everybody's field of activity has changed. People are just as busy as ever they were, but it is for vastly different reasons they are remaining in town. The fixtures of the social calendar have been replaced by those dealing with helpful works of every kind and description. Many people must regard themselves with amazement, as they contrast their life this year with that of those preceding. For it is as opposed as the poles, the habits of years have been rooted up, and an entirely new programme substituted.

No longer are invitation cards sent out with formal biddings to dinner or ball many weeks ahead. Now a few words on a card, or a ring of the telephone bell, and a verbal invitation are all that are ever expected or desired. And there is no question of notice at all. There is no such thing as entertaining on anything like a dignified scale. The social horizon has narrowed until it has become the smallest of dots, in fact one is puzzled to discover it at all.

Present-Day Hospitality

While entertaining, however, has died a violent death, hospitality in the truest sense of the word has never been more

flourishing. No matter how much we may each practise household economy it has not yet prompted us to close our doors against our neighbours. And it can only be hoped that the necessity for such a day will be slow in dawning. People have never felt more strongly than at the present time that it is not good for man to live alone. There is a strong feeling of human companionship bound up with every stage of the great tragedy. It is among the most human signs of the times. Since the days of wholesale parties have passed, when so many hundred of cards were dispatched, and friends and mere acquaintances met in one heterogeneous throng, we have made more effort to meet each other. Much more care is being taken over the minor entertaining which has replaced the "crush." A luncheon party of six or eight women, for example, takes a certain amount of careful planning if it is to fulfil a hostess's expectations. In these days, when everybody's nerves are strained to breaking point, it is no manner of use asking people who are likely to be uncongenial to meet each other. Indeed, for that matter, nobody is inclined to meet uncongenial spirits at lunch or any other times. We see the people we like, avoid those we do not, and everybody is infinitely better in consequence.

Dinner parties as social functions have ceased to exist. There will be no regimental dinners this year, no great dinners of forty or fifty people as a prelude to some monster ball. We still dine out, it is true, but we do so in a spirit of informality, and more often than not arrangements are disturbed at the last moment on account of guests being called away on public duties elsewhere. Nothing is fixed, nothing definitely settled under the existing scheme of things. We live from day to day, many of us indeed not daring to look forward as far as that, lest it be too long a stretch of time to treat with impunity.

The Change in Things

With everything else that in the days long ago made up the sum total of the Season, it is the same. How can things in all possibility be as in days of yore? It is not only impossible, it is unthinkable at present at any rate, whatever the future may hold. Too many familiar figures will never be seen again at Lord's, too many well-known faces have vanished from the river. Lovers of tennis, who followed the game at the Wimbledon Tournament, or at Nice or Cannes, during the Riviera season, must remember with sorrow one of the great lights of the tennis-world, whose steady clean play was a joy to behold. Regrets will lurk wherever the polo ponies are to be found, memories find a place in many a corner. Such a catastrophe as a war of this magnitude was bound to mean the complete upheaval of things in general, and of the Season in particular, with its regular schedule of circumscribed events.

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Many newly-gazetted subalterns will welcome Captain A. H. Trapmann's little book, "Straight Tips for 'Subs.'" In a few simple words it explains what he must do in His Majesty's Army, and how he must behave as a commissioned officer.

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BOOKS OF THE WEEK

A LITERARY REVIEW

We necessarily turn to Mr. Roosevelt's book when confronted with the pronouncements of President Wilson. Mr. Roosevelt has been absolutely frank about his own country and about us, and he and other Americans have no wish that Englishmen, in their turn, should be unduly reticent. Alluding to his own famous speech at the Guildhall, he once said to the present writer: "It would be better for all parties if there were a more candid interchange of honest opinions upon national and international matters." We have appreciated American sympathy, and have gained from it moral support, but on the other hand, there is no use glossing over the prevailing British opinion that official America, early in the war, missed a golden opportunity of protesting against the German breach of the Hague Conventions. Mr. Roosevelt assures us that if he had been at the White House this opportunity would not have been lost.

"America and the World War." By Theodore Roosevelt. Murray. 5s. net.

In part Mr. Roosevelt's book is one mainly for Americans, and in part it is a book for all the world. In so far as his general position gives him the opportunity to bludgeon President Wilson, it has little concern for us. It is much better that we should not discuss his comments on what he calls the "milk and water" policy of the President. It is better that we should leave Americans to deal with the charges he brings against the present administration: that it has neglected the navy, that it has not provided a big enough army, and that it ought to have insisted on fortifying the Panama Canal.

There is enough to consider in his more general pronouncements about the rights and wrongs of the present war, and the value of treaties and armaments. He is not pessimistic about the future. He believes that we are very slowly progressing toward "a more real feeling of brotherhood among the nations." But the time for disarmament is not yet; mere pacifism will retard the ends of "righteousness." "Events have clearly demonstrated"—and this is his main contention—"that in any serious crisis treaties unbacked by force are not worth the paper upon which they are written." "Peace treaties and arbitration treaties unbacked by force are not merely useless but mischievous in any serious crisis."

He takes up the standpoint of an impartial American, and of one who is on the side of "righteousness" before peace. He has no animus against Germany. He simply asserts that he would throw his weight against any Power which had put itself in the wrong by violating treaty rights and common obligations. He does not doubt the patriotism of Germans. He merely declares that it *was* Germany who, from whatever motives, actually violated the neutrality of Belgium; that it *was* Germany who ill-treated French and particularly Belgian civilians, contrary to the Hague Conventions signed by the United States; that it *was* Germany who dropped bombs on unfortified cities contrary to the same conventions. "All of these offences," he says, after setting forth a catalogue of illegalities, "have been committed by Germany. . . . If I had for one moment supposed that signing these Hague Conventions meant literally nothing whatever beyond the expression of a pious wish which any power was at liberty to disregard with impunity, in accordance with the dictation of self-interest, I would certainly not have permitted the United States to be a party to such a mischievous farce."

He states emphatically his view that America ought to have protested, at the very beginning, against these violations of treaties and conventions. He goes on to urge that America should prepare herself with the armed force without which treaties and conventions are valueless. And finally he insists that any future agreements on the lines of the Hague Conventions will prove worthless.

The one permanent move for obtaining peace, which has yet been suggested, with any reasonable chance of attaining its object, is by an agreement among the great powers, in which each should pledge itself not only to abide by the decisions of a common tribunal, but to back with force the decisions of that common tribunal.

What Mr. Roosevelt says is of importance, not only by reason of his personal views and his great influence in America, but because he may yet again be a President of the Republic. There is much repetition in the book, but this serves to make his view unmistakable. We appreciate his friendliness towards England all the more because he seeks to be just to Germany. We agree with him that it would be very unwise

to assume that the present war will be the last of all wars; but the general question of big national armaments, to be maintained in time of peace, opens more subtle, complicated questions which he does not touch upon. We would commend to his attention a little book which deserves to be widely read:

"Krupp's and the International Armaments Ring." By H. Robertson Murray. Holden and Hardingham. 2s. 6d. net.

Mr. Murray exposes the manner in which Krupp's and kindred firms have been built up, and the hold they have acquired over modern civilisation. "Kruppism and Modern Militarism are interdependent." Most people have a vague, general idea as to the vast political and economic power which this monster business corporation has brought to bear upon Germany. Mr. Murray traces the history of the firm from its humble origin, and describes the stages of its growth since the Franco-Prussian War. The Emperor is one of the largest shareholders. Krupp's has been able to infect the Press, and has set itself to stimulate Jingoism. But though Germany has been "the cradle of Kruppism," and it was a Krupp who produced the first gun made of crucible steel, Mr. Murray insists that since the formation of the Harvey United Steel Company in 1901 the armament firms have been in league the world over, exploiting for profit the fears and ambitions of nations. Even in Great Britain the Government has preferred to place orders with private firms rather than use the Royal Arsenal at Woolwich. He urges that there can be no possible immunity from militarism and war except by "the sweeping away of all chance of private profit to be gained in the arming of the nations." There can be no safeguard against war as long as there are Krupp's and similar firms—that is to say, as long as there are vast vested interests dependent on the imminence of war. Mr. Murray's book is important.

Speaking of Mr. Roosevelt's book, it is of interest to mention a slender volume just issued:—

"When a Man Comes to Himself." By Woodrow Wilson. Harper. 2s. net.

This is no more than a short essay on the generalities of life and conduct, and has no bearing whatever upon current political events. It is a moral application of the maxim to "see life steadily and see it whole." We see in this essay the same traits which distinguished his *Life of George Washington*. Most statesmen would be primarily concerned with the statesmanship of Washington; President Wilson emphasised especially his goodness—and that indeed is the traditional schoolroom criticism. An edifying if somewhat conventional study in right behaviour and successful morals.

"The Little Man and Other Satires." By John Galsworthy. Heinemann.

It is almost inevitable that such a writer as Mr. Galsworthy, with his pronounced opinions, his special interests, his definite technique, should come to be regarded as a sort of fixed star. We already speak of a "Galsworthian subject," a "Galsworthian character," a "Galsworthian type of Englishman"—and we could not do so if he had not familiarised us with these types in "A Man of Property," "Justice," "Strife" and elsewhere. Nevertheless, it is unsafe to label Mr. Galsworthy too exactly. In whatever he writes we may be sure that there will always be a serious undercurrent. He will always *mean* something as well as *observe* something. And, in technique, he seldom resists that effective device of contrasting apparent opposites, sometimes in order to show the underlying unity of human nature, sometimes merely to throw his subject into relief.

But in the first sketch in this book he shows us that a subject which lends itself both to reflection and to pathos can also be treated with the lightest humour and not without a touch of genuine farce. The "Galsworthian" feeling is there; but also a good deal which could never be covered by that label. In the first scene we have several persons talking at the refreshment buffet of an Austrian railway station—an Englishman and woman, an American, a German, a Dutchman, and a "Little Man." They discuss, each with his own national idiosyncrasies, the question of chivalry, kindness, and Quixotism. (It should be mentioned that it was written nine months before the war began.) The German

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AND
LAND & WATER

Vol. LXV No. 2769

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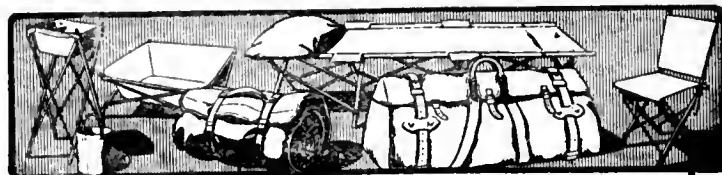
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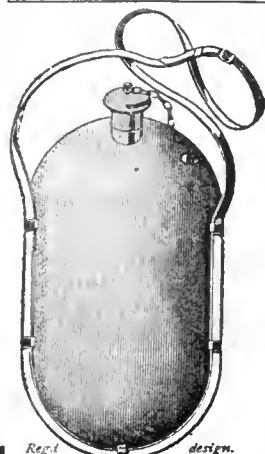
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AN INLAND MARKET TOWN

By J. D. SYMON

IT lies within easy reach of London, but it is in no sense suburban, for it retains its ancient traditions, its busy corporate life, most keenly individual, and although the builder of these latter days has not been kept wholly at bay, the town still holds many quaint and charming relics of the domestic architecture of an older England.

From the long High Street you can turn aside in fifty places, and passing under a low-browed archway find yourself in yards and open spaces where buildings of the mellowest warm brick huddle in a delightful confusion of half-timbered gables and casements that were made before the days of devotion to fresh air. The hand of modernity has been too intrusive at certain places in the High Street, but enough remains to uphold the character of an English market town, and at favoured spots the architect, as distinct from the builder, has done his later work well. He has contrived things which, a hundred years hence, will give our descendants no cause to blame their forefathers.

One or two inns retain the right Georgian character, and over the door of one of them hangs what may be taken as a survival, the last survival I know, of an ancient vintner's custom, and one that has been enshrined in a familiar proverb, whereof the meaning is little reflected upon by the majority. "Good wine needs no bush" comes glibly to the tongue, but if you asked the philosopher what he meant by "the bush," he would very likely answer, "Well, just the bush, you know." Here in my market town he would find the visible symbol ready to his eye in explanation, but alas, for purity of the antique thing.

Here again, the hand of the twentieth or perhaps the late nineteenth century has forced its inevitable modifications. The bush is a bush no longer, but a colossal hanging flower-basket, about which, however, ivy has been made to twine so cunningly that when it is in full leaf, you do not suspect the wire sub-structure to the clustering foliage. It may not be the bush pure and simple, but it is a noble and pleasing variation of the old symbol, and it has this advantage over the original sign that whereas that was sometimes severed from its root, and doomed to wither soon, this bunch of ivy is upgrowing evergreen, perennial, and suffers not, like its prototype, a constant interchange of growth and blight.

Manufacture has laid a light hand upon the township, not always to the beautifying of the outskirts, but at least one factory has shewn unwonted signs of grace, and has painted its long low sheds a delicious green on the walls and the pleasantest of old tile-red upon the roofs. The chimney has to be endured, but the buildings fall snugly into the landscape, and cannot be called a blot. Not every industry is so praiseworthy. There are other places of commercial output, the effect of which, to say the least of it, does not make for harmony but to these it is possible to turn a blind eye. They offend you for a moment only as you seek the open fields in certain directions.

Thank heaven, there are some unsullied approaches to the country. At heart this Borough is still a country market town, and on market-days the square is filled with the bleating of sheep and the lowing of oxen, when the white-washed pens are up and full, and round about stand the bargaining farmers—sturdy yeomen, who have, most of them, in these later months, sent their sons to other business than that of peace, for our County Yeomanry has made a name in Flanders. War has laid its hand upon the town, but there are moments "about full market time," as Xenophon says by way of introduction to a memorable battle-piece, when there is little to suggest that anything has broken the peace of rural England. The market is ablaze with flower stalls, which on sunny days are almost Continental in their vividness, and this fairy merchandise is neighboured by stalls of drab commodities, pieces of sole leather for the cobbler, odds and ends of scrap iron, and, most fascinating to the youthful eye, a complete emporium of cheap accessories for the bicycle.

One sign of war there is, visible only to those who know the life of the town intimately and can feel the pulse of the market, for here in these altered times the townsfolk are buying most of their vegetables, to the loss, perhaps, of the established greengrocer. He, honest man, is rather handicapped; some of his young men who formerly took orders at the tradesmen's entrance, are taking orders of a different sort elsewhere, and there is a hint, too, of a lack of horse transport. But otherwise, to the outward eye, at certain hours this inland market town might not even have heard of the present struggle.

But this aloofness is only apparent. Loiter a little longer in the market place, and you will catch a glimpse of inevitable khaki, and by and by a string of Army Service wagons will lumber into view, turn the corner, and disappear; and again, at stated hours, the chaffering business of farmers and townsfolk will pause for a moment while a regiment swings into view, stepping smartly from the drill ground to its mid-day meal, for, during these months since August, wave after wave of khaki has beaten against our unwall'd citadel, and sometimes has subsided and come to rest there for a time.

The soldiers have been encamped for the most part beyond the town, and there is a little bridge some way out that has cut them off almost entirely from the townsfolk, except during their hours of leave; but if their presence has not been obtruded to the eye, it has not been without its effect upon the community. There has been an inevitable come and go between the warriors and an unwarlike population. The town, for all its apparent calm, is really throbbing with the pulse of war; it has had, in truth, a great shaking up. Hitherto its acquaintance with the military caste has been of the slightest, and some of its good folk, mingling for the first time with officers, have not yet quite realised that "Mr." is the only title for a subaltern. They roll the really fine word "Lieutenant," unctuously about the tongue, and take such joy of the invocation that one almost regrets that so nobly sounding a title should be taboo.

Then in the auxiliary organisations for the care of the wounded and the soldiers' dependents, and in the provision of recreation for the soldiers' hours off duty, the women have found a new interest in life. They speak in terms of war, they have become learned, many of them, in the elements of the nurse's craft, and the horizon of a quiet life has widened. The thoughts of many who last year found the next tennis party or the next game of golf sufficient centre for their days, are now on distant fields with those who have gone out from our immediate circle, and there has been an extension of military acquaintance among the members of those stranger battalions that have sojourned for a while beside our more or less rural ways.

For the reflective elder people there is some harking back to times of which our fathers and grandsires have told us—to those Napoleonic days when English market-towns were alive with the tramp of marching regiments, and when the billet-master might any day knock at the door. These were the hours of life and colour, of scarlet coats and glittering accoutrements, lending to military presence a fascination which is not likely to return. But the spirit is the same, and there is still martial music to supply in sound what is lacking in colour.

The town, never perhaps exactly sleepy but intent on the affairs of the mart, industrial and agricultural, has experienced at its hours of awakening a new and bracing sensation from the mingling of the pealing bugles of *reveille* with the strident siren of the factory. Every morning while a regiment is at hand, the townsfolk are reminded by a drifting echo of martial music that these times are not as other times, and that when tyrants rage, life becomes more than a mere matter of profit and loss.

But there is romance, too, in the sound of the bugles—romance that thrills the girls of to-day, just as their great-grandmothers thrilled when they peeped shyly from behind their early window curtains to wave a farewell to last night's partner at the ball as he marched perhaps to Waterloo or some Peninsular field. Thus, still earlier, in northern dawns, the girls looked out to catch a glimpse of Bonnie Prince Charlie. With these associations is bound up the sentiment of a whole body of our national lyric utterance, which finds, perhaps, its most poignant expression in Robin Adair. It breathes through many an earlier novel, and fiction it seems to me is never more gracious than when it floats in the atmosphere of an ancient well-ordered township, with fair old houses of the better sort, where the furniture came from the hand of great artists and the girls were the girls Jane Austen knew.

It was into surroundings like these, a world of lavender and roses and old formal gardens standing back from the street behind warm-red brick walls that the advent of the marching regiments brought so piquant a note of contrast and of romance, and in an age when the redcoats have given place to a duller hue, it is this that still survives in the thoughts and feelings of our English market town, touched to a new excitement, and it may be to a new purpose, by the transforming hand of war.



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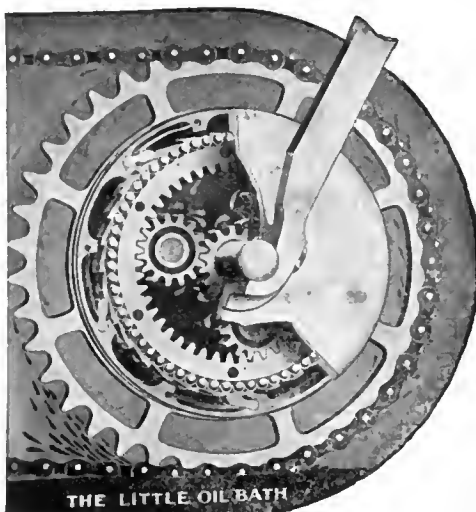
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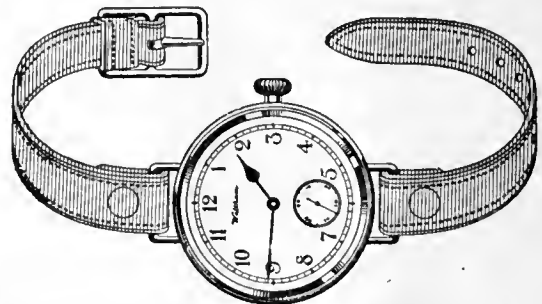
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THE WAR BY LAND.

By HILAIRE BELLOC.

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THE NEW ITALIAN FRONT.

THE work upon the Italian frontier is so far preliminary only to main operations: covering troops at work in front of an army still mobilising. When these main operations develop, we shall not understand them unless we seize clearly two main points, which are of far greater importance than the success or ill-success of the outpost fighting, the seizing of passes and the shelling of permanent works during the period of mobilisation.

These two points are, first, *the numerical effect* which the intervention of Italy will have upon the campaign, whether our new Ally is successful or unsuccessful in the main operations; secondly, the fact that success in these main operations will very largely depend upon the railways which either party commands.

Nowhere in Europe, save upon the frontiers of Russian Poland and the Pyrenees, is there so great a contrast between two railway systems as upon this new front. To great modern armies the railway is everything. Not only does it actually feed them, but it supplies in a fashion quite impossible to any other form of transport those immense masses of heavy artillery munitions upon which all work against the modern defensive is now proved to depend.

Let us begin, then, by analysing the conditions under which the entry of Italy into the field will affect that numerical factor which is the basis of every sound judgment upon the war as a whole.

THE NUMERICAL EFFECT OF ITALIAN INTERVENTION.

Call the total numbers of men fighting on the two fronts, Eastern and Western, thirteen. Then on the same scale Italy brings in during the first phase a further one. How can so slight an addition greatly affect the issue?

Because this immediate addition of one (with another one in reserve) challenges the narrowing margin of man-supply remaining to the enemy.

To appreciate this truth, the argument may be tabulated as follows:

Roughly speaking, before Italy came into the field the position was this:

Of the enemy's total possible numbers of men of useful age, efficient for service and available for the fighting line, as distinguished from all the services auxiliary to the actual fighting, rather more than half remained.

The Allies in the West had suffered far less severely in proportion to their numbers, and had in the new voluntary armies of the British a perpetually growing reserve.

The Allies in the East—that is, the Russians—from a difficulty in equipping their very large potential reserves, and feeding and munitioning

their existing fighting line, had not this numerical superiority over the enemy opposed to them.

The Allies, as a whole, were already in numerical superiority over the enemy, and one that was absolutely certain to increase as time went on. But the Allies, being divided into two widely distant fields of action, that superiority could not be used as a whole, and there was still an opportunity for the enemy to show *his* superiority locally upon the Eastern front.

In the matter of munitions, which are the other limb of the numerical calculation, the divergence was less pronounced in the West, but probably in the rate of production and accumulation of shell the Allies here had also some advantage over the enemy, and, with neutral sources of supply open to them and an unhampered supply of material, this superiority would presumably grow. But on the Eastern front the enemy possessed a very heavy superiority of munitionment over our Ally.

Upon such a situation there enters upon the side of the Allies a force which will reach in a comparatively short time the figure of 800,000 men, and behind these are reserves ultimately totalling at least another 800,000.

What will be the effect of this addition?

In the first place, to state the thing in round figures, you have probably seven units of the enemy distributed thus: Two on the Western front; three on the Eastern front; two, all told, within the area contained by these two fronts and ultimately available—counting the classes of 1916 and 1917, or, rather, that part of those classes which has not yet been used.

As against these you had on the Allied Western side three; on the Allied Eastern side three. *Behind* the Allied Eastern side you had any number you like—two, three, or four—which only waited equipment to appear in the field, and which could gradually replace wastage; and on the Western side already two, ultimately three, in process of rapid equipment and able in a very short time to appear in the field.

In the same proportion, the advent of Italy brings in, as I have said, *one* upon the south, and that at first sight seems a small figure. But the effect it may produce, while depending largely upon the form which fighting takes upon this new front, can quite rapidly become considerable.

To appreciate the way in which this new factor will affect the enemy's numbers, although that new factor is only the addition of *one* to the other thirteen units mentioned, *let us see the effect of that one upon the enemy's reserve of man-power—taking that reserve of man-power at the figure suggested.* Either against this *one* which Italy brings in a purely defensive attitude is adopted, the excellence of the enemy's frontier depended upon, and only half is sent forward to stand against the *one*.

That is the first possible policy.

It will mean that the defensive must submit to what is presumably a numerically much superior heavy artillery attack. That defensive is particularly weak just where the Italian offensive would do most damage. A purely defensive attitude of this sort would probably mean, after the lapse of a few weeks, the loss of the Istrian coast, and, though the enemy would have weakened himself by no more than the figure one-half, he would have gained nothing ultimately by so weakening himself. He might almost as well have sent no one to adopt that purely defensive attitude, for there is in truth no such thing in war as the unqualified defensive: it would be expenditure without fruit. One might as well have merely abandoned the territory thus ultimately lost.

But such a development is exceedingly unlikely. It is far more probable that you will have one of the remaining possibilities of the situation developing, and of these the next is a strong offensive undertaken by the enemy to see whether he can get a decision on this new Southern front which will rid him of peril there for some time to come.

Well, if he does that the calculation is very simple. Such an attitude disposes at once of most of the men of any kind remaining to the enemy. It would be impossible for him to undertake a strong offensive against the Italians unless he were to cease simultaneously his offensive upon the East and to forgo any reinforcement of the Western line.

But he cannot, upon the Eastern front, simply drop the offensive. If he does not maintain it, and even maintain it at its present rate of expense, he must go back. The Eastern front is not a continuous line. It is subject to fluctuation on account of its great length, and when the pressure which makes it fluctuate one way ceases to be applied, it begins at once to fluctuate the other.

The German phrase about "the Russian offensive being broken" is meaningless. You break the offensive of a man, or of an army, when you have hurt him so much that he cannot recover his strength. But though the equipment and munitioning of the endless Russian reserves is slow, it is not non-existent, and the moment the violent and expensive hammering at the Russian front relaxes, the tardy process of Russian accumulation begins to be felt again by the enemy. We have had at least a dozen instances of this in the course of the war, and we are all the more certain to see future ones, because the ports which are ice-bound in winter, though distant, are now open, and a certain measure of supply can reach our Ally from abroad.

Suppose a third development on the Italian front—and quite a possible one. The enemy will not risk remaining weak in the West and abandoning his own offensive in the East for the sake of a violent and perhaps unsuccessful effort upon the new front. On the other hand, he dare not risk a purely defensive attitude there with insufficient men. He compromises, and sends there, as he sent during months into East Prussia, forces which keep up a sort of ding-dong alternate resistance and counter-offensive along the Italian front. He attempts no decision, but simply keeps his foe occupied from the Trentino to the Adriatic. Then he is occupying, perhaps, one-half of his remain-

ing reserve of men and suffering an additional wastage month after month, to no definite end.

He might count, perhaps, on losing by death, capture, sickness, and evacuation of wounded not more than 100,000 men a month, but he would be losing that, and he would be having to supply the gaps at that rate, running the risk all the time of seeing this form of defensive break down at any moment, and his main Adriatic ports and arsenals fall into the enemy's hands. It would mean that he would have taken about half his reserve of men for this new front and that of the remaining half the drafts which he would otherwise have been sending in full strength East and West would be diminished by about 25 per cent.

All this emphasis I give to the grave numerical effect of Italy's coming in supposing the fighting to be confined to the Austro-Italian frontier alone, Italian troops not to be used upon points where the defensive has far less strength. (The Austro-Italian frontier is the strongest defensive line in the whole of the fighting—much stronger than the Carpathians, and stronger, even, than the Masurian border.) And it is, further, an analysis which leaves out of calculation the immensely superior facilities of the Italians for bringing up heavy pieces and their munitionment.

It is, therefore, an *a fortiori* argument.

It is taking the worst conditions for one's own side and leaving out many elements that are in one's favour; and the conclusion is that whatever form the fighting takes upon the new frontier, the enemy, if he does not want ultimately to abandon his territory on this new front, will, at the least, suffer to the extent of one-half his reserve power to begin with, and about a quarter of the remainder, and at the most would suffer the expenditure of nearly all his reserve power.

It is difficult to see any way out of this arithmetical conclusion: That the entry of Italy into the field cannot have any other than a very powerful effect upon the contrast in numbers between the Allies and the enemy at this moment, an effect far greater than the mere addition of a twelfth or thirteenth (for that is about what it is) might suggest—it is nearly a *sixth* of the allied force actually in the field—and an effect thus disproportionately great *because the entry of these new numbers immediately affects the enemy's small remaining reserve of man-power.*

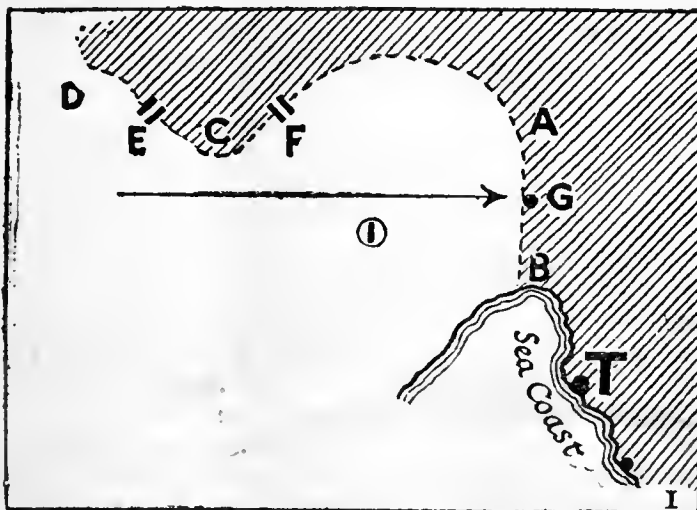
THE RAILWAY PROBLEM ON THE ITALIAN FRONT.

The war, whatever form it takes upon this front, will be mainly conditioned, as I said at the outset of this, by the contrast between the railways upon either side of the front, and that, in its turn, will mainly affect the war through the supply of munitions for heavy pieces.

The Austro-Italian front is essentially a mountain barrier upon which, by their political action of half a century ago, the Austrians obtained the advantage—that is, the frontier between their own territory and that of Italy commanded the exits from the valleys of the Alps.

On account of this it would in any case be necessary, even if there were no such thing as heavy guns and no such things as railways, for any Italian force desiring to operate against the Istrian Peninsula to secure itself against an attack upon its communications from the north.

Here is the matter in its simplest diagrammatic form.



A certain point (T) and its territory (Trieste and the Istrian Peninsula) being of political importance and the objective of an Italian advance (1), is defended by a certain strategical frontier, A B, which is the line of the Isonzo, with its principal nucleus at Gorz (G); but the political frontier, turning round by the north along A C D, has given to the enemy openings which are the mouths of the valleys at E and F, from which enemy forces can come down right upon the flank of the main line of the Italian offensive (1), and interfere with its communications. The line A F C E D is the mountain line of the frontier, the bulge at C is the point of the Trentino, and the gates upon either side, E and F, are the passes out of the Trentino on to the Italian plain, notably by the Val Sugana and over the Tornado.

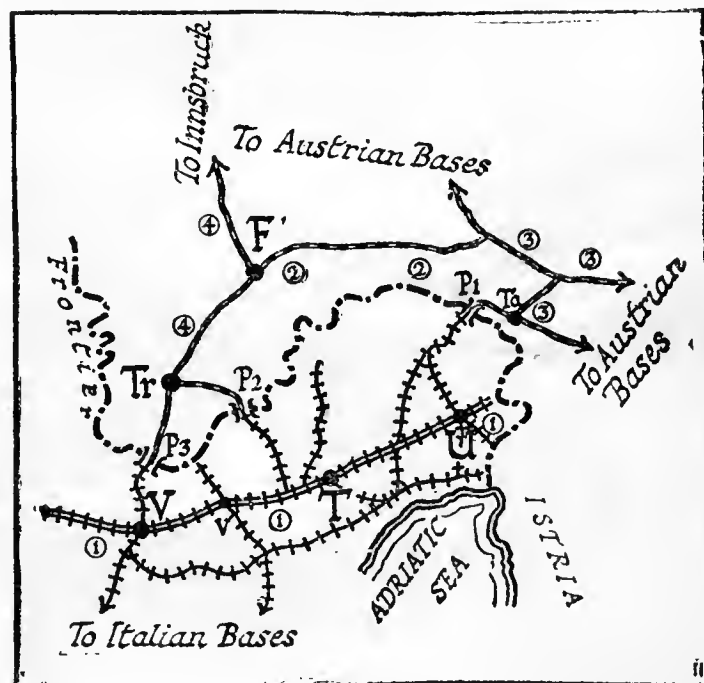
It is obvious that under any conditions of warfare a force acting along the line (1) against A B would have to protect its flank thus menaced from the north.

But the factor of railways, especially as supplying the munitions for artillery, and particularly for heavy artillery, adds something to the problem of this frontier which was not present when the great campaigns of the past—notably the victorious advance of the young Napoleon—established the military study of the district.

The contrast between the railway systems in this region is a product of the Alps. To some extent it redresses the disadvantage under which Italy suffered from the way in which the frontier is traced; but, apart from any advantage or disadvantage upon either side, it makes the possession of certain nodal points absolutely essential to the campaign. How this is so the following sketch will show.

The Italian plain has running through it a line (111), serving Verona (V), Vicenza (v), Treviso (T), Udine (U), which permits of rapid lateral transports of men and munitions from East to West, or vice versa, at will. Further, this main backbone is supplemented by, and relieved by, sundry other lines, some of which are shown in the sketch, and which, all between them, form a perfect network of communications available to the Italian commanders for the supply of munitions laterally to any point of concentration and back towards their main bases. This is because this system of railways is the system of a plain, and of a plain very densely populated and highly developed by modern industry. But once we have passed the frontiers we have upon the Austrian

side a totally different state of things. There for the whole distance of this front we have but one lateral line, marked (2 2) upon the sketch, confined strictly to a narrow mountain valley, and not possessing any branch lines at all. The enemy would

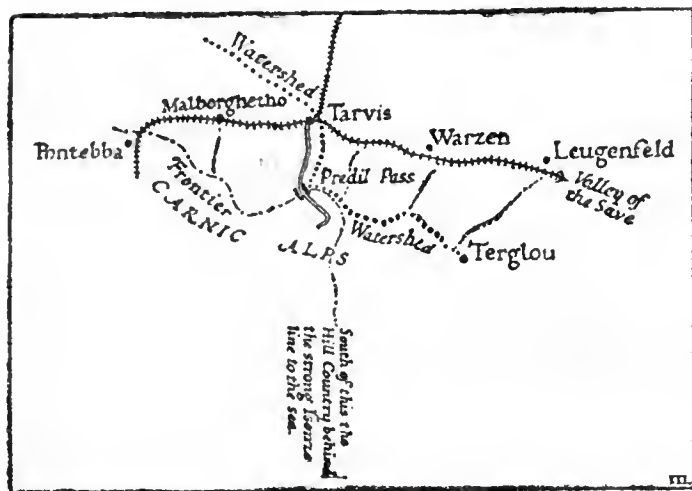


only bring up munitions to his front along one of two lines, that marked (3) passing through Ta (Tarvis), that marked (4), and passing Tr (Trent), and his only means of concentrating munitions and men at will from one of these lines to the other is the narrow mountain communication (2 2), a good railway line with plenty of rolling stock, but unrelieved by any branching lines.

Further, it is evident that the capture by the Italians of three points, nodal points, or junctions, in this system, would necessarily have the greatest effect upon the war. These three points are Tarvis (Ta), Trent (Tr), and, most important of all, the mountain junction of Franzensfeste (F). There are altogether three, and only three, railway lines of advance out of the Alps on to the Italian plain upon this front, and these are the Pass of Pontebba above Tarvis, which I have marked P (1); the Val Sugana, which I have marked P (2); and the Valley of the Adige, which I have marked P (3). Now the capture and retaining of Tarvis (Ta) blocks all entry by the pass P (1). It renders circuitous and difficult the supply of munitions for the capture of that pass. The capture of Trent (Tr) closes the two railway entries P (2) and P (3), but for a counter-attack down the Adige Valley you would still have the whole railway system of Alpine Austria concentrated upon them. For though munitions and men could not use the pass P (1), blocked by the occupation of Tarvis (Ta), yet the full communications on the east with the Austrian basin, the railways (3 3), could add their effect to the railway from Innsbruck (4 4), and, so far as a single double-line railway could be used, the line down the Adige towards Trent (Tr) would be a perfect avenue of supply. The railways do not join again save sixty miles away and more behind the great mountain masses.

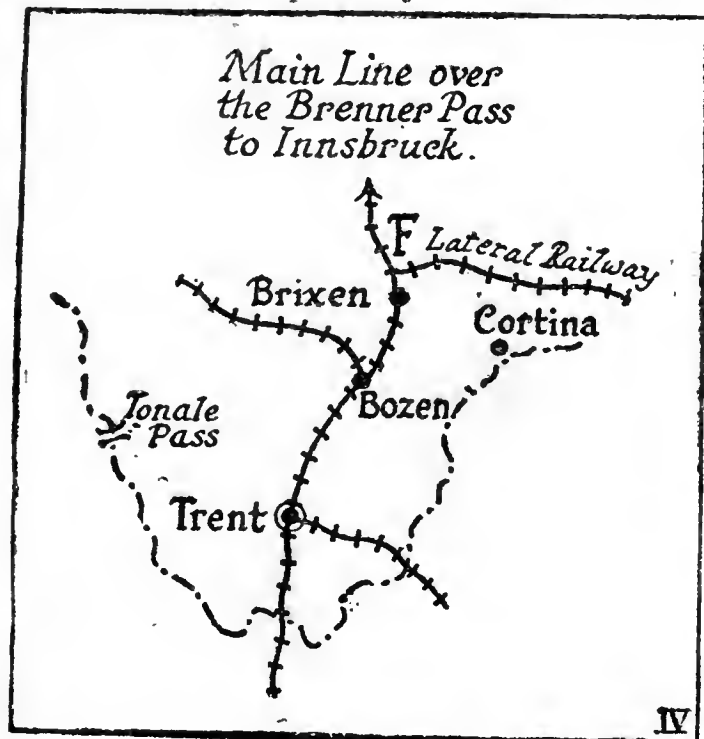
Franzensfeste itself is only the name of a fort, but it is the junction of the railways here in the neighbourhood of the village Aicha. It would be no good holding the mere town and station of Brixan, half an hour's walk away, unless the junction were seized.

The frontier at this point follows the watershed of the Carnic Alps, and the height of this wall at the critical point is not formidable, and the shape, which is more important than its height, is not formidable either. In the twenty miles or so from the Terglou mass (which is where the Julian and Carnic Alps join) to the railway frontier at Pontebba there are numerous passages



over the wooded hills, and one good high road over the Predil Pass, which is only 3,800 feet above the sea and 1,400 above the railway. While, therefore, a main force shall be advancing up the valley, from Pontebba past the fortified point of Malborghetto towards the junction of Tarvis, other bodies could be turning the line by coming in from the south and beyond the Predil all the way to the Terglou, and there are opportunities for comparatively large bodies of infantry to come down upon the railway over the Save Valley. No good roads, I believe, but tracks, and the ridge, save in the immediate neighbourhood of the Terglou, is not formidable.

The seizing of the second group of Austrian Alpine railways is a more difficult matter. The junction of Trent itself is heavily fortified, and it is but the first of the nodal points, and the least important. The point Bozen (a branch railway which leads up a side valley, but does not join on with any further railway system) could be reached along a comparatively open road by anyone who had possession of the Tonale Pass to the south-west, but the all-important junction above Brixen



at Franzensfeste (F) could not be reached save by a frontal effort up the gorge of the Eisack. There is no way over the mountains for an army, or, at least, no way which quite a small force could not block.

There is, indeed, upon the map—at least, upon a map on a large scale—an apparently easy attack upon the lateral railway where the Italian frontier comes close to it, in the region of the Dolomites. It is obvious that cutting this lateral railway would have the same effect as seizing the junction at F. But between the valley in which the lateral railway runs (called the Pusther Valley) and the Italian streams on the Cortina side is the ridge of a main range, and all that Dolomite region is abominable fighting country. There are three roads, one on either side of the Cristallo, the great mountain to the north of Cortina, and a third just where the frontier comes closest to the railway, over the Kreuzberg. Against an insufficient defence, of course, any one of the three might be used, but it is not a region in which great numbers of men could act against any considerable opposition.

THE PRZEMYSL SALIENT.

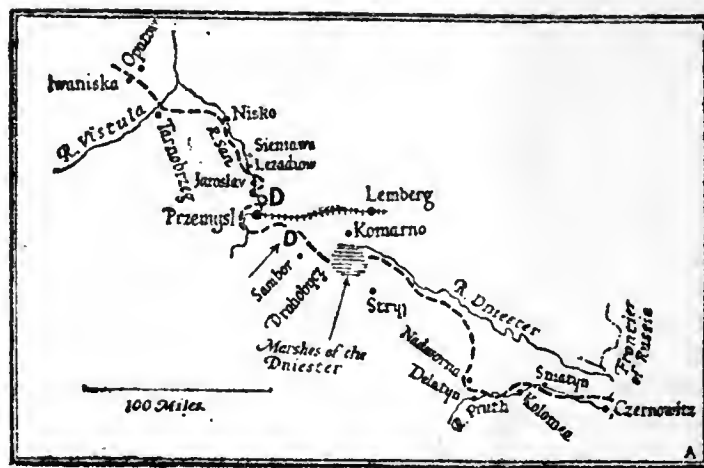
The fighting round the salient of Przemyśl continues undecided, and, vast as is the importance of the issue, there is very little analysis of the position to be usefully attempted until something like a decision appears on one side or the other.

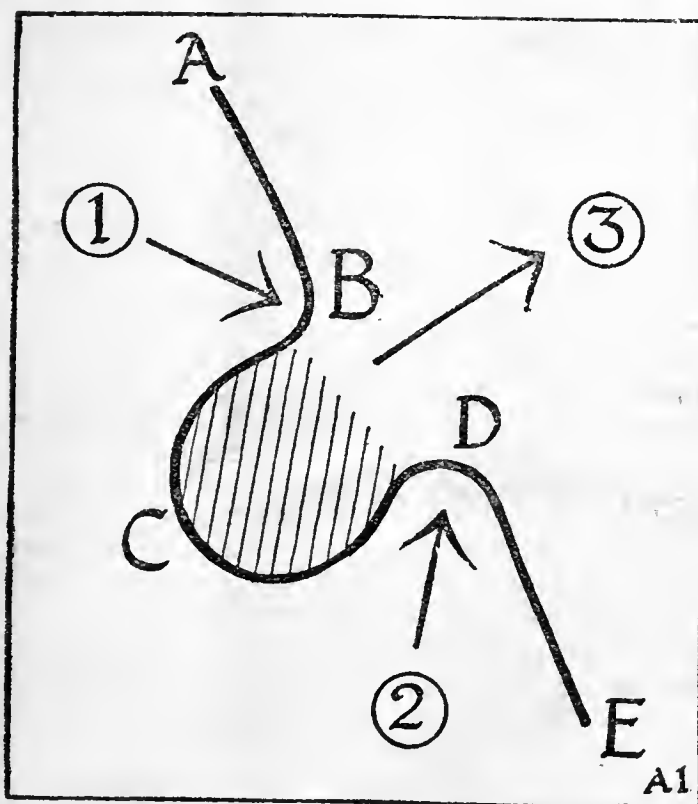
The preliminaries of this struggle and the reason that the particular point of Przemyśl has become of such moment is already familiar to the readers of these columns. The successful advance of the enemy through Galicia, chiefly possible through the dearth of Russian munitions, particularly in heavy shell, exhausted itself at the line of the San. A portion of that line in the immediate neighbourhood of Jaroslav was forced in the middle of May, the enemy obtaining a belt beyond the river which reached ultimately as far as Siemawa, and was in places four or five miles broad. But the enemy was unable to advance further than this, and the Russian line remained unbroken.

Meanwhile the Russians had chosen to hang on to the salient of Przemyśl, thus creating a situation apparent in the sketch of the line here shown.

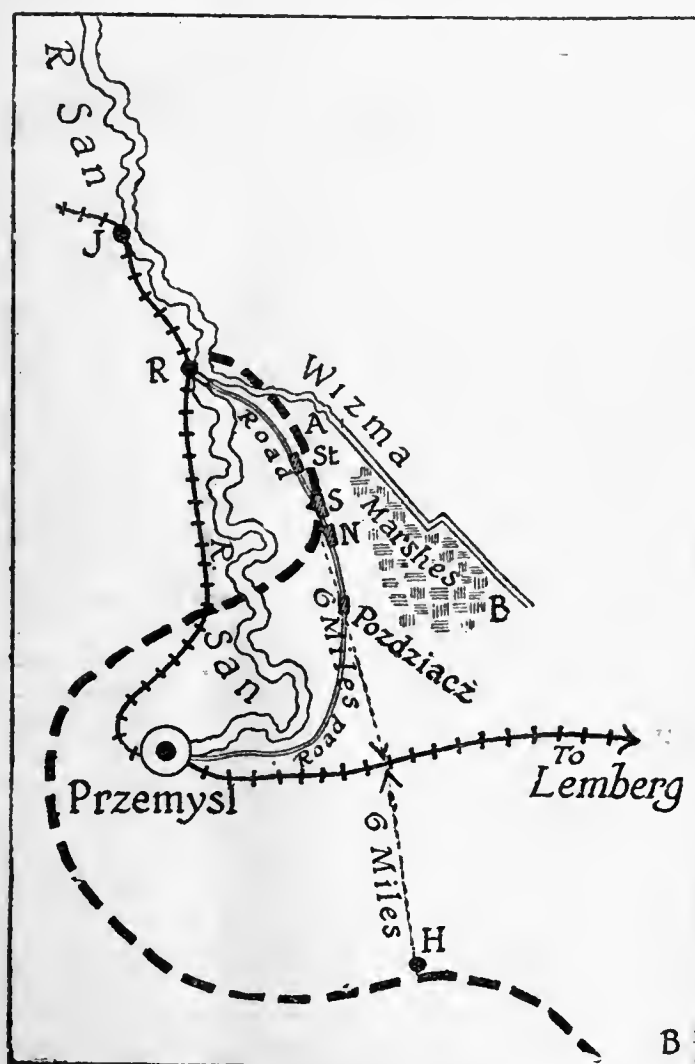
The salient was full of danger to the Russians because a sufficient concentration of the enemy upon either side of its "neck" at D might cut that neck, destroy all the forces within the salient, and possibly pierce the Russian line as well.

This latter and major peril attaching to the





salient must not be forgotten. If in my general line A E I allow a salient B C D, and if my enemy, hammering along the arrows 1 and 2, cuts off my salient, he may not only enjoy the important results of capturing everything that lies within the shaded portion, but it is also very



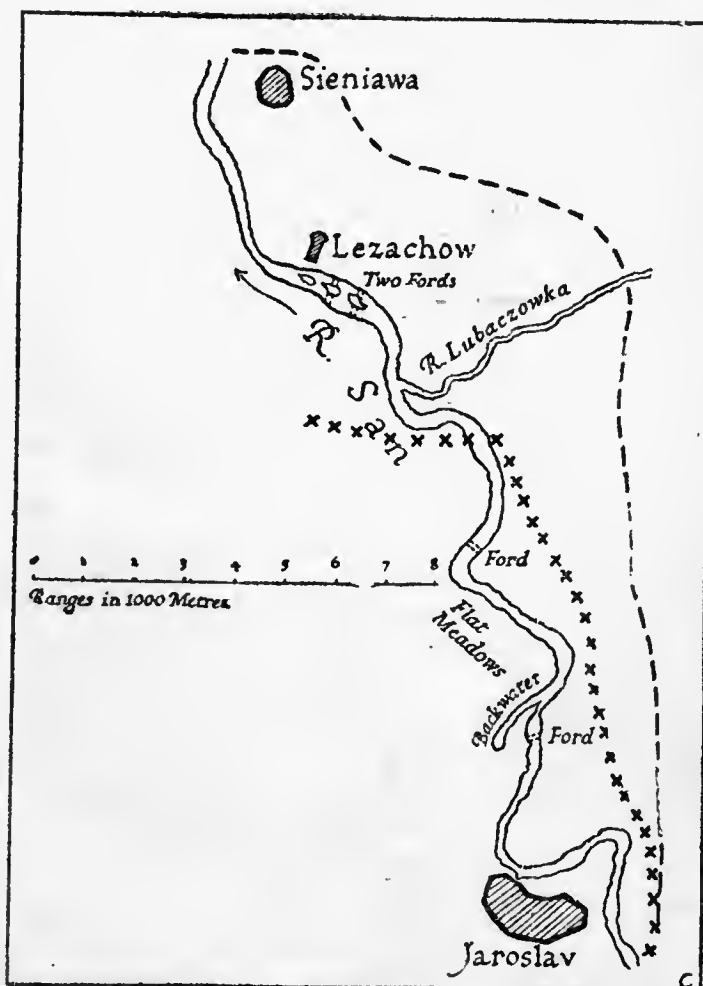
likely that in his push he would get right through as along the arrow (3).

If, therefore, the Austro-Germans could succeed in cutting the neck at D they would stand a very good chance of piercing the Russian line as well as capturing whatever was within the salient

itself. That is why the enemy is making the very vigorous effort he is to cut that neck at D. How far he has progressed in this task and what risk he runs of failure may be seen in the following two diagrams. Here, first, is the detail of his position round Przemysl itself.

The Russian line having been forced back in front of Jaroslav (J) across the San, a further violent effort was made by the enemy, based upon the railway, and he forced the San again in front of Radymno (R) and a little above that point as well. Just above Radymno comes in the River Wisnia, and between it and the San the string of four villages, Stubinto (St), Stubno (S), Naklo (N) (upon which we must particularly fix our attention), and lastly Pozdziacz (P). They are united by a road which comes in from Radymno and runs on to Przemysl. Just behind the two last of them lie the marshes of the Wisnia, which are here drained by that river, canalised between A and B. Now the German effort at one moment got as far as the village of Naklo, but the Russians have so far stopped its getting further. From Naklo to the railway is about six miles. On the south of Przemysl, at about the same distance, the enemy is attacking in precisely the same fashion in the neighbourhood of Hussakow (H), so that the whole salient is about twelve miles across.

The situation is still quite undecided, but it is worth noting that meanwhile north of Jaroslav the Russians have begun to advance perceptibly against the enemy's flank. They have retaken Sienawa, also Lezachow, where the enemy crossed it before a fortnight ago. They have even crossed the Lubaczowka, and are advancing to threaten the operations between Jaroslav and Radymno. Our Ally is able to act thus in the north probably because every concentration of effort has been made against the salient of Przemysl itself by



the enemy, and he has weakened himself elsewhere.

It can only be insisted upon once more that this critical point of the Eastern front has not at the moment of writing (Tuesday evening) produced any decision one way or the other.

P.S.—As this paper goes to press news comes that the enemy has forced the outer works of Przemyśl on the north (German communiqué) but

failed to force the principal work on the west, as yet (Russian communiqué). This success was obtained by him last Sunday, and on Monday he was turned out of the western fort (No. 7). Should Przemyśl be forced thus by direct attack it will, of course, not have the effect which would be produced by cutting the neck of the salient: it would still leave the Russian centre intact.

THE MILITARY ARGUMENT FOR AND AGAINST CONSCRIPTION.

BECAUSE men who have the power both to promote and to burk discussion have recently worked hard in favour of immediate compulsory service, and because the matter is, in the course of such a war as this, to be regarded mainly from its military side, I must beg my readers' leave to set up, as well as I can, the arguments for and against the system; I mean the purely military arguments. The political and moral arguments for and against are not suitable for these pages.

We must first of all clearly distinguish between a system of conscription established in time of peace and in preparation for war, matured and organised in all its details (a task of some years), bearing its fruit in the shape of trained reserves, &c., we must distinguish, I say, between this and compulsory service (what the men of the French Revolution called "*Levée en Masse*") suddenly decreed in the midst of a war.

The two methods have widely different characters and are of widely different military effect.

ARGUMENT FOR CONSCRIPTION WHEN LONG PREPARED.

In favour of conscription, as organised during peace, with leisure for the scheme to mature, and as a preparation for war, the purely military arguments are so strong that they hardly need stating. Briefly, they are these:

(1) Conscription gives you the maximum *number* of men.

(2) Conscription gives you perfect *regularity* in your recruitment.

(3) Conscription permits you to organise the whole State for war with the maximum *simplicity*. You know just what men of just what age you will get and in just what numbers, if you call up such and such a number of classes—that is, yearly contingents. The "class 1915," for instance, means the young men who will have reached and passed the age of twenty in the course of 1915. You know what reserves you have behind, whatever number of "classes" you have chosen to call up. You know in what trades (and in what numbers in those trades) your reserves are employed. You exactly allow for the men who must remain behind as miners, on the railway, as ship-builders—even for agriculture.

(4) Conscription lowers the *expense* of an army—

(a) By the simplification of all its machinery;

(b) By giving you men whom you need not tempt with the promise of a special wage;

(c) By providing you with a regularly working machine for assembling men, feeding them, transporting them, &c., which is obviously a cheaper machine to work than the rapidly improvised and unexpectedly and capriciously expanding organisation which the voluntary system clamours for suddenly in time of war.

One of the many reasons why the expenditure of Great Britain has been so greatly out of proportion to her military effort (compared with the other Allies) has been the fact that no such simple machine was ready.

(5) Finally, conscription provides a group of minor advantages such as these:

(a) It allows you to drill and train your men in large known units, for which your instructors, training grounds, housing, &c., are all marked down;

(b) It tells you what equipments you must have ready for your reserves;

(c) It enables you to keep your exact proportion between all arms;

(d) To draft men at will from one unit to another, &c., &c.

On the other side of the account all that can be set is the undoubted truth that a *professional* army (not any sort of voluntary force) is, number for number, superior to a conscript army. But as against this one must always remember that a professional army can only form quite a small proportion of the total available material.

Connected with—or, rather, a part of—this same argument is the fact that *esprit de corps*—that very valuable traditional spirit differentiating one unit from another, stimulating competition between all, and promoting a sort of local patriotism of the utmost moral effect—tends to be swamped in a conscript army, and is always much more lively in a voluntary or professional one.

But, I repeat, there is no comparison between the purely military arguments in favour of and against a system of conscription, as established during some long period of peace, in preparation for war. The weight of argument is all in favour.

Roughly speaking, such a system reaches its maximum of utility after a trial of about twenty-five years. Men are first drilled (when they have passed their medical examination) after or about their twentieth birthday. They are, in the bulk, quite unfit for even the last military duties after forty-five. In twenty-five years, therefore, you have a national system with all its last reserves established.

COMPULSORY SERVICE ESTABLISHED DURING THE COURSE OF A CAMPAIGN.

But while the arguments for and against conscription on its purely military side must thus be stated strongly in favour of the system, when there is time for preparation, and when it is being established under peace conditions—with presumably a long time before one in which to mature it—quite another set of arguments attach to the application of compulsory service *during the actual process of a great campaign*.

The two great examples, of course, are the French Revolutionary Wars and the action of the Northern States during the Civil War in America. The analogy of these examples in the past is imperfect, but so far as they teach us anything we shall discover from them exactly what we find upon an examination of the conditions applying to Britain to-day—to wit, these two main propositions:

(1) Compulsory service thus applied in the midst of a war is valuable or necessary in inverse proportion to the established rate of voluntary enlistment.

(2) Compulsory service is valuable or necessary in proportion to the expected duration of the campaign *after* the policy is adopted, compared with the time through which the campaign has run *before* the policy was adopted.

To examine these fundamental propositions:

Let us first eliminate those arguments in favour of a long-matured scheme of conscription which obviously do not apply to universal compulsory service during the course of a war.

Next let us state the military arguments *against* the adoption of such a policy in the midst of a war, and, lastly, let us state the arguments in its favour.

When we have thus surveyed the field we shall see that the two propositions laid down above are true and are the main truths that we have to consider at this moment.

I.—THE NEGATIVE ARGUMENT AGAINST.

(a) The advantages of a conscript system which *do* not and *cannot* apply to compulsory service inaugurated in the midst of a war are, first, and most important, the provision of older reserves. A long matured conscript system gives, as we have seen, an exactly calculable reserve of older men behind the existing young men of the active army. We can call up for the purpose of a small war so many men; of a larger war, so many more. If we have only trained a certain proportion of our total manhood, yet under a conscript system we know exactly how many of the remainder could pass the doctor, where each is to be found, what his trade is, and what his age.

A conscript system applied in the midst of a war does not enjoy these fruits of long preparation. All the work of registration, &c., has to be undertaken in the midst of the other very heavy work of the campaign; the reserve of previously trained men does not exist, and, presumably, a great proportion of the men available have already volunteered.

(b) Next, we have not that element of simplicity which a conscript system long established during peace would have given us. Many units

are formed; the new levy will add bodies varying in character from those we already possess.

The "*cadres*"—that is, the body of professional officers and non-commissioned officers which form the framework within which the new units are organised are not in existence.

II.—THE POSITIVE ARGUMENT AGAINST.

With these two negative points go, of course, the positive arguments directly opposed to compulsion in the course of a campaign, as follows:

(a) A compulsory levy suddenly calls for the training of a great body of new officers, the material for which you may not be able to find.

(b) It calls for new equipment which you will not have ready.

(c) It sharply differentiates within the body of your army between the men who have already volunteered and the men who have been summoned—the moral effect of this upon any armed force must be very seriously weighed, and is one of the principal checks against a rash and unconsidered application of the policy.

(d) Lastly, you have—and vastly the most important point—the fact that *the compulsory principle suddenly applied in the midst of a great campaign involves the setting up of new machinery by which to decide who is required for work at home and who can best be sent to the front*. To segregate men into these two categories, to make certain that you will be making the most of your industrial power, to turn out the maximum amount of ammunition, and of weapons, and of ships, and of clothing, and the rest of it, is a business at once lengthy and laborious. It will throw chaos into every branch of public service, and it will, as a mere mechanical task, be one of months. Finally:

(e) (An argument which has its military side). If of many allies one in particular is of use to its fellows in spheres other than the field itself—e.g., as holding the sea, commerce bearing, transport work, coal supply, finance (which reposes on production and commerce), manufacture of equipment, &c. Then the arguments in favour of restricting the total body of men to be used in the field obviously apply to that ally as a member of the whole. If it put too many men into the field at the expense of other activities necessary to the whole alliance that alliance would lose far more than it would gain.

III.—THE ARGUMENTS IN FAVOUR.

The merely military arguments in favour of adopting the compulsory principle in the midst of a war are simple, and may be put very briefly.

(1) It provides in the long run (supposing all its disadvantages can be got over) the full maximum of fighting power. Sooner or later a compulsory system, even though it be applied after a campaign has already run a great part of its course, will give you all the men available for the completion of it.

(2) It gives you a simple machine calculable in all its numerical relations and freed from every anxiety upon recruitment as a whole, or the excess of men in one service at the expense of another.

(3) It ultimately permits you to arrange exactly the man-power in manufacture and transport required behind your army for its supply and maintenance.

(4) It leaves you free to face an indefinitely long future secure in an increasing stream of recruitment, calculable exactly in amount.

(5) It provides a universal system everywhere equally cemented by the strongest sort of discipline. There are no patches.

SUMMARY OF THE ARGUMENT.

Now, it is quite evident from such an examination of the full arguments for and against that the two main propositions we have put forward above can be established.

(1) *The compulsory principle applied in the midst of a campaign is valuable in inverse proportion to the rate of voluntary enlistment already developed and continuing.*

Supposing that a nation has in adult males of military age a total of eight millions. Supposing that of these eight millions six millions at the outside are efficient; supposing that of these six millions (under the particular conditions of the country in question) the number of men who—though efficient for military service and of military age—will be required for transport, for manufacture of munitions, clothing, &c., for carrying on the foreign trade, for supplying not only its own armies but also, perhaps, those of its Allies, three million must remain behind. You have then a maximum of three million left.

Supposing that of these three million two million have voluntarily enlisted. It is presumable or certain that these two-thirds will physically be a pick of the whole; that the strict regulations for their enlistment will have eliminated the older men and the less fit, who will only be taken in the last emergency. It may justly be postulated that with two million thus voluntarily enlisted the grave dangers and disorder and delay occasioned by the sudden adoption of a compulsory principle would not be compensated by a corresponding advantage. You might get another half-million equal, as material, to the two million you had already obtained, but half a million will be the outside figure. The chances are that most of those not enlisted would be men somewhat over the age or somewhat less efficient than your voluntarily enlisted material, or (as the state of the labour market proved) required for the civilian work of making provisions, of transport, &c., upon which every army in the field reposes, or for some purpose of commerce, or exchange vital to the alliance.

Supposing, upon the contrary, that with three million really available, only a million or less had enlisted. Then you would be justified in running the risks and suffering the disadvantages of a belated application of the compulsory principle even during the strain of a great war.

The whole thing is a balance, a compromise between the advantages and the disadvantages of getting the greatest possible number upon the one hand—and lack of homogeneity in the forces, the immensely laborious business of segregating those who may go from those who may stay, finding new cadres and new equipment, the consequent vast confusion and delay, &c., &c., upon the other.

Where exactly the balance must be struck only those who study existing conditions in all their details and who have all the statistics (many of them secret) before their eyes are in a position to judge. But one can repeat that wide margin between a certain minimum and a certain maximum, and say that if anything like two-thirds of

the total maximum are obtainable by voluntary recruitment, the difficulties attaching to a compulsory principle for the remaining third outweighs the advantages. While at the other end of the scale one can say, with equal certitude, that anything like a third, or, at any rate, much less than half, of the total available strength appearing on the voluntary principle during the first part of a campaign shows that the compulsory policy, with all its drawbacks, is worth applying.

One may add that the compulsory principle has better arguments on its side if the higher figure be nearly, but not quite reached, than has the voluntary principle on its side if little more than the lower figure has been reached.

With very high figures of voluntary enlistment (such as three-quarters of the men available having already appeared in the first months of the war), the belated application of compulsion would manifestly be a folly. If only a third—or, at any rate, less than a half—of the available numbers have appeared, it would as manifestly be wisdom—that is, it would be wisdom in a great war involving the very existence of the nation.

(2) But the second proposition is of at least equal importance with the first. *The value of compulsory service applied in the midst of a campaign varies with the expectation of the length of the war, and with a comparison between that expectation and the time elapsed since its outbreak.*

If, from the course of a campaign, it seems probable that the first part, which has already seen a very large voluntary enlistment, will not be followed by many more months of hostilities, then the tardy application of compulsion would not be worth the disadvantages attaching to it. You would find yourself at the end of the war suffering from all the friction between volunteers and conscripts, with masses of men on your hands whom you would have to disband and who would have been called up for nothing, whom you had yet but imperfectly trained and probably had not equipped at all. You would have struck a blow in the void.

If, on the other hand, the war seemed destined to long duration, and the lapse of time between its outbreak and the application of compulsion was little compared with the probable lapse of time between the application of that principle and the close of hostilities, then the argument for compulsion would become stronger and stronger in proportion to your expectations of the length of the campaign—and that for two reasons:—

First, that the compulsory principle would call in year after year men who had just reached military age, and in regular numbers.

Secondly, that, tardy as equipment must be for great improvised armies, and slow as must be the provision of officers for them, the lapse of no more than six months would set this right. If the war were destined to continue one, two, or three years after the compulsory principle had been adopted, then its adoption would be amply justified.

REGISTRATION.

In thus presenting the merely military arguments for or against the compulsory principle at this moment in the campaign, there must not be omitted a certain third course for which the strongest arguments exist and

against which no appreciable arguments (of the military character at least) can be put forward: This is the course of registration.

The adoption of a register upon which all men of military age, or, indeed, beyond what is commonly called the military age, should be set down: their physical efficiency, their place of residence, their occupation and aptitudes, would not only be a step necessarily preliminary to any general enrolment, but of the utmost value to the voluntary system itself should it be continued, and an instrument indispensable

to any future organisation, voluntary or compulsory, of the total national fighting power.

The drawing up of such a register was advocated by the present writer many months ago, in the first phase of the war. He can see no military argument against it. Its military value is obvious, and though it would have been far more useful had it come into existence last summer, it can still be of high value even at this late turning-point of the campaign—for the turning-point we have, without doubt, reached and are now in the act of passing.

H. BELLOC.

THE WAR BY WATER.

By A. H. POLLEN.

NOTE.—This article has been submitted to the Press Bureau, which does not object to the publication as censored, and takes no responsibility for the correctness of the statements.

SUBMARINES—& COMMUNICATIONS.

DURING the past week we have suffered the heavy loss of two battleships—*Triumph* and *Majestic*—by submarine attack at the Straits. The mine-layer *Princess Irene* blew up in Sheerness Harbour with a lamentable loss of life, practically all the officers and men being killed. The German war on merchantmen has been quite extraordinarily virulent, a dozen ships having been torpedoed—one American ship, the *Nebraskan*, and five other neutrals among them. The previous week's lull betokened, then, no weakening of this unscrupulous campaign. The shifty reply to President Wilson's Note was received just as the news of the attack on the *Nebraskan* arrived, so that the whole question has become dangerously acute. Finally, E 11 has repeated the achievement of E 14 by crossing the Sea of Marmora, sinking transports, and exploding a torpedo right amongst the quays of Constantinople.

Both this and the sinking of our battleships were singularly brilliant performances. But it would be a mistake to limit our interest in them by looking only at the skill and enterprise displayed. The submarine here plays a new rôle. Each side is using it to attack the communications of the other. Our transports and warships are the base of the forces on shore. If they can be sunk or driven off, the army will be isolated. The communications of the German Turkish Army lie across the Sea of Marmora. There are no suitable roads overland into the Peninsula. Reinforcements, ammunition, supplies, must come, and the wounded must go back, by water transport. Which side stands to lose most by its communications being disturbed? Surely not ours. The moral of the Turks, both at the front and at home, is poor. It seems that the German domination has not become sweeter with the failure of all Turkish military effort. If our submarines can continue their ravages, the enemy should be faced with a position at least as difficult and disconcerting as our own.

THE LOSS OF THE BATTLESHIPS.

Triumph, according to the Turkish reports, was steaming slowly with her nets out, soon after midday on Tuesday, May 25, when she was sighted and fired at by a German submarine. The torpedo, it is said, tore through the nets and, striking the ship amidships, exploded. *Triumph*

sank in nine minutes. She must have been expecting trouble, for all the officers but three and nearly all the crew were saved. The Turks give great credit to the German officers for not having shelled the destroyers and other craft that hurried up to save *Triumph's* crew. It would have been so easy, the account says, to have killed the sailors struggling in the water by shrapnel and to have blown up the rescuing British boats. The noble feelings of the German officers made them forbear from so cruel a proceeding. The account goes on to say, as if in strong contrast to this becoming humanity, that the submarine was pursued for a long time by British destroyers, but escaped undamaged. Perhaps the pursuit is a better explanation of the German forbearance than this alleged humanity. According to this account, *Triumph* was accompanied by another battleship, and was preceded by two destroyers, while other destroyers and scouts were cruising in the neighbourhood to cover the battleship against submarine attack. This is partly confirmed by the Admiralty's note of May 26, which says that the submarine was unsuccessfully chased by destroyers and patrolling craft until after dark. Of the loss of *Majestic* we have no details at all, except that she was supporting the army on the Gallipoli Peninsula and was torpedoed in the course of the morning. This also, then, seems, as one would suppose, to have been a daylight attack.

THE NEW SITUATION.

It has, of course, for a long time been obvious that the Germans could and would send submarines to the Mediterranean, and for at least three weeks their presence there has been so well known that large rewards have been publicly offered for information that would lead to the discovery of their bases. Readers of the daily papers will have noticed that the *Echo de Paris* announced last week that Tchesne, quite near Smyrna, was known to be a German submarine base. Another, it was reported from Mitylene, on Tuesday, has been discovered. There have been frequent bombardments of the Asia Minor coast in the neighbourhood—no doubt all suspected bases have been receiving attention. The *Jeanne d'Arc* is reported, in the course of a reconnoitring expedition, to have seized a large Turkish craft having many thousands of cases of benzine on board, and, further, to have destroyed several benzine depôts on shore. A blockade of Smyrna and the Adriatic

coast, as from June 2, has been announced. Replenishing with fuel and food should be the main problem to the German submarines, and these activities will, in all likelihood, make the finding of a safe base more and more difficult as time goes on. One supposes that it will be impossible for them to use Constantinople without risking the passage of the Turkish mine-fields, a task which the English submarines certainly have compassed; but they possess better facilities for ascertaining where the mines are than the German officers, even with such Turkish information as they can get.

If the presence of these boats were a complete surprise, it would be easier to look upon their success with equanimity. But the situation which exists to-day is not unexpected, and we have reason to suppose that every possible precaution has been taken to meet it, both by the Admiralty and by the Commander-in-Chief on the spot. It is precisely the fact of this attack having been anticipated that makes the loss of these two ships so disturbing a matter. It seems only too certain that we must prepare ourselves to hear of other losses, and those not less serious. But there is no reason to anticipate these losses occurring with extraordinary frequency; we shall not lose a ship every three days. With so many destroyers about, with surrounding waters so actively patrolled, and with everyone so especially on the qui vive, there must have been a lot of bad luck to make this double loss possible.

Can anything be suggested that has not been done? For all practical purposes there exists but one form of passive defence to torpedo attacks, and that is the use of nets. If the Turkish account of the loss of the *Triumph* is correct, the torpedo cut through the net. The Admiralty notes make no mention of nets at all. I pointed out a fortnight ago that when the hot-air torpedo was first introduced it was realised that at top speed—that is, at short range—its cutters could certainly force their way through any net then in existence. But, of course, nets can be made much stronger than the old nets were, and it is quite possible that, even though *Triumph* had her nets out, they were drifting surface high. Had she been going more than four knots this must certainly have been the case. The torpedo that struck her, therefore, may have passed under, and not through, her defences.

The only other means of protecting ships is either to drive off the submarines by destroyers—and in this line it would, indeed, only remain to get as many more destroyers as possible—or for the ship to make the task of the submarine impossible by maintaining a high speed.

The reader knows from previous discussions that:

(1) When a ship is at high speed the capacity of a submarine to place itself favourably for attack is very greatly diminished, and

(2) That a fast ship is much more difficult to hit than a slow one. And, as may be gathered from the instructions given to merchantmen, that

(3) A fast ship on a zig-zag course is a more puzzling target than one on a straight course.

Can, then, the battleships at the Dardanelles protect themselves by speed and manœuvring? Undoubtedly they can, but—unless the fire control in use is very different from any adopted by most other navies—only at the cost of diminishing the efficiency of the guns. This is because all move-

ment by a firing ship introduces great difficulties in keeping the range, and in some cases presents an insurmountable obstacle to keeping the *line* of fire. All these difficulties become greater in proportion as the ship's speed increases and as her course is varied. In short, any manœuvres adopted by a ship to baffle the enemy submarine will baffle her own gunners even more completely.

I have attempted below to explain this crucial matter without being too technical. And if I fail to make it as lucid as it should be, I am yet going to appeal to the reader to take some trouble to understand what I say, because in this matter we have the best possible illustration of the truth that all schemes of naval strategy, and every end which it is proposed to gain by the tactical use of ships, *ultimately turns upon the methods that are adopted for the employment of naval weapons*. If these methods are defective, tactics must be restricted and many strategical objects made impossible of attainment. Hence the fortunes of a whole campaign may turn upon certain *minutiae* of fire control, which ardent and impatient spirits in time of peace have thought far too insignificant for consideration.

THE SUPREME COMMAND.

Altogether, the successes of the German submarines at the Dardanelles have added considerably to the dangers and difficulties of that already anxious situation. But it is not a situation which justifies any sort of panic or unbalanced fear. The submarines have simply added to the difficulties of an already exceedingly difficult undertaking. And it is fortunate that for the solution of these difficulties the Government has now the help of two of the best minds which the country possesses. After my notes appeared last week, it was definitely stated—what, indeed, we had every reason to expect at the time of writing—that Mr. Balfour and Sir Henry Jackson had taken Mr. Churchill's and Lord Fisher's places at the Board of Admiralty. Mr. Balfour brings to his duties an unrivalled knowledge of affairs and a wide experience, if not of departmental administration, yet of the supervision of the administration of the whole Empire. For the first time a man good enough to be Prime Minister is not too good for the Navy. No statesman of the first rank has given a closer or more continuous study to the problems that arise out of the defence of the Empire. It was, indeed, he who took these problems out of purely departmental hands and constituted an amphibious and non-party body for their special consideration. And he has been a member of this body since its formation. Those who know him best say that he is conspicuous for a characteristic that certainly endeared his predecessor as First Lord to the Naval Service. Like Mr. Churchill, he has a fine fighting spirit, a quality of which those at the head of a great fighting department can never have too much. In Mr. Balfour's case the fighting spirit will be accompanied by perhaps a greater patience, a greater willingness to leave the professionals to do what all agree is wanted in their own way. He will certainly trust, and have every reason to trust, the quite exceptionally gifted officer whom he has made his first adviser. Just as Sir Arthur Wilson was undoubtedly the greatest tactician the Navy possessed in the passing generation; just as Lord Fisher revolutionised the construction of all con-

temporary navies, and so placed himself, at the normal finish of his career, in a category by himself, so is Sir Henry Jackson a type of officer the times most clamorously demand—a man who can bring to the administration of the Navy a mastery of its technical problems that is quite unparalleled, and broadened and illumined by a continuous study of its higher strategies. The

new administration is being put to an immediate and most severe test. But whatever losses and set-backs there may be—and both are to be expected—Mr. Balfour and Sir Henry Jackson can be looked to with absolute confidence to handle the situation with the coolness, the courage, the judgment, and the knowledge that it requires.

THE CRUX OF NAVAL GUNNERY.

IF two ships are stationary at any distance apart, the range remains constant; if both advance in the same direction and at the same speed, the range remains constant. But if either *manœuvres*, the range reflects the difference of movement. Suppose a ship advances in a straight line towards a fixed target at an even speed, the range must decrease at that speed; such a manœuvre would represent no difficulties to gunnery. The sights would simply be lowered at the rate at which the ship was moving. If she was going 12 knots, at 400 yards a minute; at 15 knots, 500 yards a minute, and so on. Given a reliable speedometer, good communications, and an efficient sight-setting service, it would be exactly as if the ship was stationary.

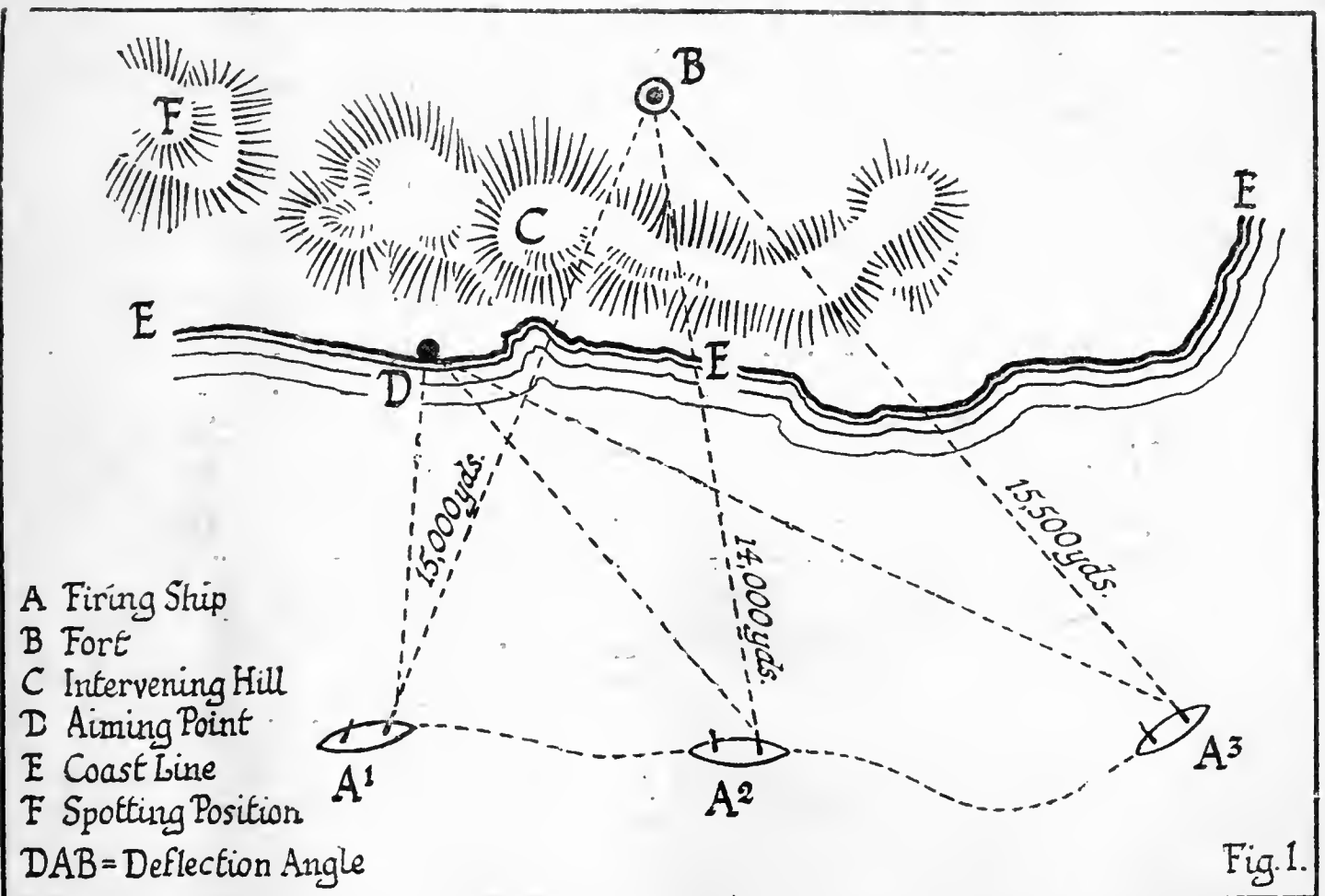
But if the ship went on a course not directly towards or away from the target, the rate at which the range altered would not be constant—it would vary. As the range increased, the change in each successive minute would become less—as it diminished the change would become greater. On the other hand, the rate would change very little and very slowly. If the target were visible, with the instruments generally in use, this changing rate could be ascertained; and if the speed of the ship was not very high, the sights could still be correctly altered.

If the firing ship, however, began to manœuvre—that

rest or on parallel courses; or *changing*, when either moves differently from the other. Next, that the *rate* at which the range changes is either *constant*—which is rare, because limited to movement in certain fixed relative directions—or *varying*. Finally, that the *variations* of the rate reflect the manœuvres of the ship. If the ship is going slow and changes her course only by small turns—a few degrees at a time—then the variations in the rate will be *small*; while if the ship is fast and makes large turns, the variation will be *large*. As we have seen in a given case with a fixed target, a turn of 90 degrees, made in 90 seconds, can convert a *decreasing* rate of 500 yards into an *increasing* rate of a like amount—a total change in rate of no less than 1,000 yards a minute and a half!

How can the range be kept in such conditions? Obviously, the only way would be to make the sights move as the range changes. It all turns on continuous knowledge of the rate, or, rather, on the rate being *anticipated* and *continuously controlling* the sights.

The rate-finding instruments used in most navies are based upon a formula that was first embodied in an instrument made and patented, some ten or eleven years ago, by Captain Dumaresq, of the Royal Navy. This instrument, when set to the firing ship's speed and to the speed and



is, make sudden and large turns—then the range would jump up and down. Suppose, for instance, a ship was advancing at a high speed with a target bearing 45 degrees from the port bow—that is, before the beam—and suddenly turned 90 degrees to starboard. If before the turn the range was decreasing at 500 yards a minute, it would now be increasing at practically the same rate. The turn, therefore, would have converted a *decreasing* rate into an *increasing* rate.

The reader will have perceived from the foregoing that ranges are either *constant*—when the ship and target are at

course of the target if the target is moving, must first be held in such a position on board ship that its zero line is in coincidence with that of the firing ship's course—no easy matter when a ship is yawing, and almost impossible if the ship is turning. A pointer has then to be directed at the target. When all this is done, the rate at which the range is changing at that moment is indicated. Messrs. Barr and Stroud have introduced an improved instrument, which is, in fact, a mechanical equivalent to Captain Dumaresq's indicator. It shows the rate on a dial instead of on a table,

and can be made to operate a transmitter, so that the instantaneous rate, when ascertained as above, can be transmitted to the place where the orders to raise or lower the sights at the speed required are being given.

Note with regard to both these instruments that they indicate the rate at the moment, that they must be pointed at the target, and must be kept in coincidence with the course line. Neither can give a continuous indication of a

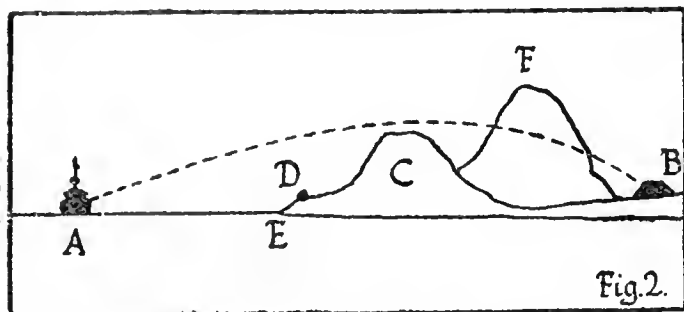


Fig. 2.

changing rate, neither can be used when the firing ship is turning. Both require the target to be visible. Let us see how these limitations affect the Dardanelles problem.

Our ships there are engaged in two tasks—to support the infantry in their advance to the Gallipoli heights and to destroy the forts when the heights are won, and the Army can correct the ships' fire. In each task they have to engage their targets, either *direct*—that is, with the target visible—or *indirect*, when the target is concealed by intervening hills. Let us take the last case first.

The sketches, Figures 1, 2, and 3, will make the necessary procedure clear. Figure 1 shows a ship, A, lying out at sea engaging a target, B, on shore, which is concealed from A by an intervening hill, C. At F (to the left of C) is a higher hill in the possession of A's troops, from which A's fire is observed. E represents the coast line, and D is some conspicuous object—a rock or ruin on the coast, which is a convenient aiming point for the gunlayers in A. The general position of B in relation to A would have been ascertained by plans, maps, and charts; so that an approximate range can be put upon A's guns, and at the same time an approximate deflection angle, D A B, put upon the sights, which then will be pointing at D, while the bore of the gun will be pointing towards B. The observers on the hill F (or in aeroplanes) will correct A's fire both for deflection and range; so that the angle, D A B, and the range, A B, will in a few rounds be ascertained with precision.

A can now continue firing with confidence so long as its position is not altered; but if A proceeds to start at a high

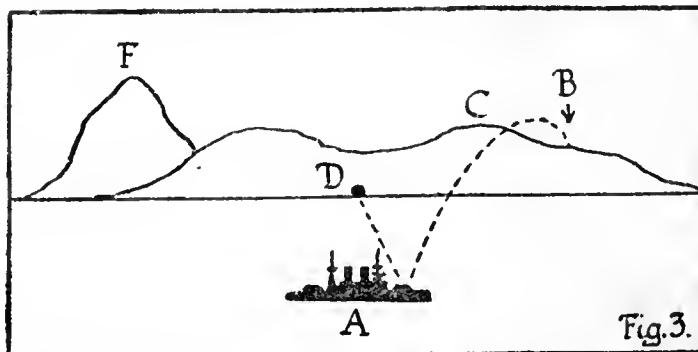


Fig. 3.

speed on a wavy course, coming in due time to A2 and then to A3, the range will have changed in all from 15,000 yards to 15,500; but there will be many gradations up and down. Now, as A cannot keep the bearing of B, B being invisible, it will be impossible to know the rate at which the range is changing, and consequently it will be impossible to keep an accurate range. But, further, the angle, D A B, will, of course, change monstrously. D therefore becomes valueless as an aiming point and the direction, as well as the range, of the target will become lost the moment A moves.

Now, supposing that there were no hill at C, and B was visible from A wherever A proceeded to, then it would theoretically be possible, by means of instruments built on the principle of Captain Dumaesq's, to have a constant indication of the actual rate of change. But unless that rate is impressed upon the sight synchronously with its occurring, very serious errors intervene, as would appear, for instance, from Figure 4. In Figure 4 the upper ship, A, is supposed to be descending from north to south towards the lower ship, B, which is proceeding from west to east. When at a range of 10,650 yards, A proceeds to make a 90 degrees turn, so as to come on a course parallel with B. This turn, we will suppose, takes one minute and a half to execute. In that minute and a half the range will alter from 10,650 yards to 10,000 yards. In the first half-minute the range is diminished by 325 yards, in the second by 225 yards, in the third by 100 yards. But the rate at the beginning of the first half-minute is 375 yards per half-minute; at the beginning of the second half-minute is 300 per half-minute, and at the beginning of the third is 175 yards per half-minute. If, then, these rates had been persisted in for the whole of each half-minute, there would have been an error of 50 yards in the first half-minute

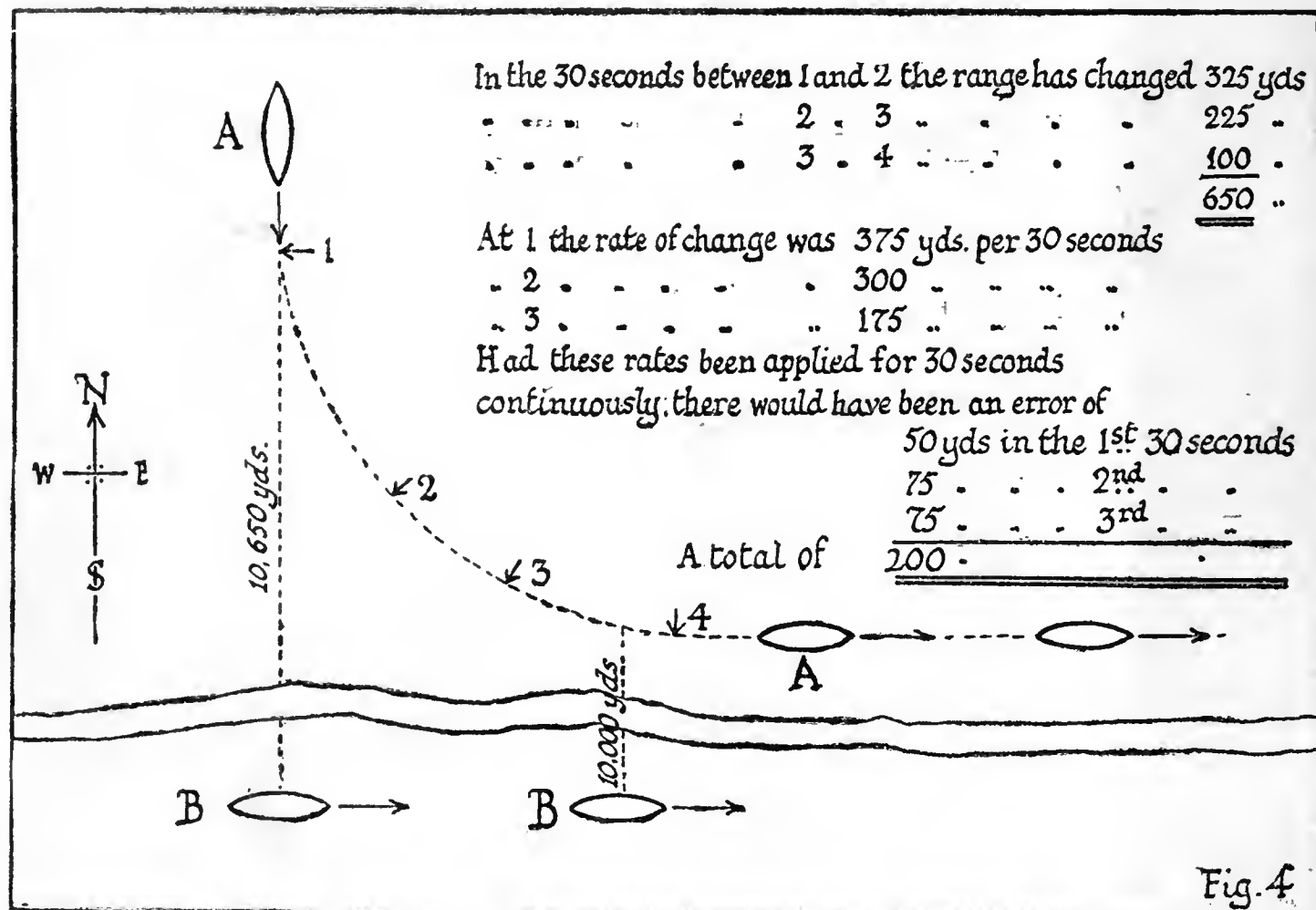


Fig. 4.

and of 75 in each of the last. In 90 seconds, while making a single quarter-turn, therefore, the gunlayers in A would have got the range wrong by no less than 200 yards, and would probably have ceased hitting before the first minute was over.

There is nothing novel or unexpected in war having brought this problem to the front. It is at least six years since the fire-control experts of the British Navy realised that no rate-finding or rate-keeping device would be adequate to the requirements of modern action unless it could automatically deal with a *varying* rate, *alter the sights automatically* as the rate varied, and, above everything else, be capable of *generating the future bearings* of the target—and this whether it was stationary or maintaining a previously known course at a previously known speed. The grounds put forward six years ago for maintaining that such a device was an elementary necessity of war were that in action it would often be necessary to manœuvre, and that the target would be often, and for considerable periods, obscured by smoke. If, then, the loss of bearings meant the loss of the range, gun-fire would be inefficient because intermittent.

But when, after many years of patient and costly experiment, an automatic rate-finding and rate-keeping device was produced to meet these requirements, it was very early realised that, though evolved *principally* in view of the necessities of naval action, it would be invaluable for either direct or indirect bombardment, where the attacks of destroyers or submarines would make protective evolutions necessary.

Indeed, the demand for a solution of the rate problem arose largely out of the perfecting of the long-range torpedo. For it was this that made it quite certain that destroyers armed with these weapons would in the future take part in Fleet actions. A threefold corollary would follow on their participation. In the first place, battleships would have to be sub-divided into smaller squadrons—say, four ships instead of eight, so as to shorten the target front presented

by a line of ships. Secondly, all evolutions would have to be carried out at the highest practicable speed, so as to increase the difficulty of aiming the torpedo correctly. And, lastly, sudden and large changes of course would be necessary so as to avoid or disconcert torpedo attack, when it was known to be imminent.

At the time of which I am speaking it was axiomatic that the moment a squadron changed course gunfire would have to cease because the rate of change could neither be accurately calculated, nor, if calculated, kept accurately on the sights. The solution called for by these conditions was really a demand that ships should be able to keep the range with exactly the same accuracy when manœuvring as they could do when they were standing still. It is one of the curiosities of modern naval history that when a solution in concrete form of the most obvious of all artillery problems was produced the monopoly of it, which the Admiralty had paid heavily to make possible, was abandoned before the device itself was tried.

At the Dardanelles, where the targets are stationary, only one-half of the fire control problem comes into play—viz., making the ship's helm free once the range and bearing of the target have been ascertained. If ever a Fleet action takes place, the necessity for a solution of the other half of the problem will arise. We shall then have to find out the speed and course of the target, as well as its range and bearing. The range of any target at sea or on land must, at great distances, ultimately be found by the observation of fire. Obtaining its bearing is a comparatively simple, but not quite a simple business. But ascertaining its speed and course presents difficulties very similar to those presented by ascertaining and keeping a variable rate. They become greater in proportion as the ship manœuvres or goes faster. And no means are of the least use unless they give an instantaneous and accurate result in all conditions. Like the rate-keeping system, no manœuvring by the firing ship must check or impede the necessary operations.

A. H. POLLEN.

ROUMANIA AND THE WAR.

By COUNT CHEDDO MIYATOVITCH.

Late Serbian Minister to the Court of St. James.

PUBLIC opinion in Britain, as well as in some other countries, gives evidence of disappointment that Roumania, the youngest member of the Latin group, has not entered into the war simultaneously with Italy, her elder and more powerful sister. In some quarters, even, the opinion is held that Roumania is sitting on the fence waiting to act on the side of the group of Powers to which victory inclines. Such an opinion is a great injustice to Roumania, and we ought at once to recognise that her situation is far more complicated and difficult than that of Italy has ever been.

Italy had only one Italia Irredenta, but for the Roumanian people there exist two Roumanix Irredentæ: Transylvania and the Tamish Banat under the crown of Hungary, and Bessarabia under the sceptre of the Tsar. Until quite lately Roumanian statesmen were divided into two groups: one group was of opinion that the problem of greatest urgency was the delivery of Bessarabia from Russian rule, while the other group thought it more urgent that Transylvania should be delivered from Hungary. It is not surprising that of late a new group has been formed of opportunists pure and simple, who thought that the problem as to which plan should first be put in execution would be determined by circumstances. Under King Carol, the first of the three groups was decidedly predominant, but during the last ten years the second and third groups were gaining in influence, and since the declaration of war they are apparently in the ascendant, although there is still a considerable number of Roumanian politicians who distrust Russia to a greater extent than they distrust Austria and Germany. These men are not inactive, even to-day, when the unsheathing of Italy's sword gives greater probability of victory to the Allies; the Roumanian situation is complex, because opinions are so far removed from unanimity.

But, even if opinion had been unanimous on the side of the Transylvanian programme, it would be necessary to secure the success of that programme not only during the war but also during the negotiations for and the conclusion of peace. It was absolutely necessary to make an arrangement with Russia, and that arrangement is no simple affair.

The eventual annexation of Transylvania, Bukovina, and Banat by Roumania affects the interests of Russia, Bulgaria, and Serbia. Russia, in negotiating with Roumania, has to consider not only her own interests but also those of her two *protégés*, Serbia and Bulgaria. Put differently, it might be said that Roumania has to consider every detail of her immediate future, and to take into consideration the harmonising of her interests with those of Russia, Bulgaria, and Serbia. Negotiations are a difficult matter, for they are affected by very complex questions, and I am not at all surprised that they are not yet concluded.

I must say, and that with sincere regret, that a certain responsibility rests on the Roumanian Government for the slow progress of the negotiations, owing to her claims having been excessive at the outset. These claims included not only Transylvania and Bukovina, but with Banat was claimed the whole left shore of the Danube from the Turnu-Severin up to a point opposite Belgrade, the capital of Serbia, and this in utter disregard of the fact that a large part of Banat and the wide Danubian zone, from Bazial to Panchovo, is Serbian country, inhabited by Serbs in overwhelming majority. Fortunately, there is now a fair prospect that the interests of Serbia and Roumania can be harmonised in that particular zone.

But the greatest difficulty in the way of a speedy declaration of war on Austria-Hungary by Roumania has been provided by the attitude of Bulgaria. Only Bulgarians can understand that attitude fully, but no doubt they are the best judges of their own interests. They strenuously deny the accusation which has been made against them to the effect that they have written compacts with Austria and Turkey binding them to remain strictly neutral, and they have declared that they will remain neutral even if Roumania attacks Hungary. But as they are at the same time complaining bitterly against the injustice done to them by the terms of the Treaty of Bucharest, and vow to redress that injustice at the first opportunity, they are regarded distrustfully by all their neighbours—Roumanians, Greeks, and Serbs alike. M. Venizelos, an acute and far-seeing statesman, considered that it would be necessary to secure the

neutrality of Bulgaria by the cession of Kavalla before Greece could join in the war on the side of the Allies, as is her fervent wish. Roumania, for this same reason of the doubtful neutrality of Bulgaria, could not venture to invade Transylvania until some security against attack by Bulgaria had been obtained—for Bulgaria looks forward to the reconquest of Silistria, and not only the territory ceded by virtue of the Treaty of Bucharest, but the entire Dobrutchia. Roumania seems to be willing to buy security by the cession of some territory to Bulgaria, but wants not only a special treaty with Bulgaria, but also a guarantee from the Entente Powers that Bulgaria should in no case occupy Dobrutchia. Bulgaria, a proud country, considers a foreign guarantee of her own formal engagements a superfluity, and at the same time the Entente Powers do not see how they could guarantee to Roumania the attitude of Bulgaria in all circumstances.

I wish to state only the difficulties which Roumania has to overcome before she can join in the war on the side of the Allies. These difficulties are great, but not insuperable; for

Roumanian diplomacy is very able, and is assisted by Russian diplomacy, the ablest and most resourceful statecraft of the world. The sentiments of the Roumanian people have always been in full sympathy with the aspirations of France and Italy, and they have never been more in sympathy than now, when these two countries are fighting for the highest ideals of humanity and for a permanent peace in Europe. But, apart from sentiment, the political and economic interests of Roumania—indeed, her duty to Roumanians outside the bounds of her rule—are clearly pointing to the one possible policy—intervention on the side of the Allies, and the rendering of assistance in the task of securing freedom, justice, and permanent peace, which means a new organisation of Europe on the basis of nationalities. Roumania will undoubtedly join the Allies as soon as her diplomatic relations with Russia, Bulgaria, and Serbia are completed, and we shall not have to wait very much longer for the successful conclusion of a full and reliable understanding between these four countries.

THE VALUE OF ITALY TO THE GREAT ALLIANCE.

By COLONEL F. N. MAUDE, C.B.

DURING the critical weeks preceding the declaration of hostilities between Italy and the Dual Alliance, it seemed to me that her ultimate decision was so inevitable that not even the dullest of diplomats could fail to perceive the danger of delaying preparations to meet her entry into the struggle on the side of the Great Alliance. Yet the news which has come through during these first few days is sufficient to show that Germany is very far from ready to afford substantial assistance to the Austrians, who, on their own part, are already so pressed by the Russians in the North that the troops already in position to meet the Italian invasion are far from adequate to the occasion. This only serves to throw into stronger relief the desperate nature of the German offensive against the Western Carpathians and to expose the motives underlying the extraordinary exaggeration of the first bulletins announcing glorious victories. Clearly the whole undertaking was set on foot to impress the Italian diplomats, and so all-important was this end to German policy that she concentrated every available man and gun for the purpose, hoping that the first gain of ground, which was inevitable in view of the forces she had assembled, might stave off the danger of Italian intervention, even at the eleventh hour.

I doubt whether the German General Staff ever expected more from their blow, for no men in the world have been better trained to understand the fatal dangers which arise from lessening in any way the mobility of a Field Army, and the veriest beginner amongst them must have seen from the first that if an expenditure of between two million and three million shell a day was an essential element of the plan, the momentum must die out from their attempt as soon as the Army had advanced more than fifty miles or less than one hundred from their last railway depots. After which the rate of advance would be limited to the rapidity with which the railways and roads destroyed by the Russians in retreat could be reconstructed—say to four or five miles a day; whereas the Russians, on the wings of the great "phalanx," still retain their full freedom of movement at the rate of between twelve to fifteen miles a day, and it appears very clearly from the most recent reports that they are using this advantage most thoroughly.

Since the Defence of the Realm Act applies not only to our own future movements but to those of our Allies, any attempt to forecast the strategy that the Italians will adopt is impossible, but it is permitted to us to speculate freely on our enemy's means and movements, and the following figures will suffice to give a guide to our readers. It is worth while recapitulating them because although published officially by the French Government in January last, their full significance seems to have been lost upon the British public.

According to these figures, the Germans in January last,

over and above the 4,000,000 men (the approximate strength of the armies actually at the front), had only 2,000,000 men fit for the field, comprising the 1915-16-17 classes, as well as untrained Landsturm. At the rate at which their armies had been wasting through killed, wounded, and prisoners—not sickness—it would have taken rather under than over ten months to exhaust them. After that date the armies at the front could no longer be maintained at their full numerical strength and collapse would be inevitable and speedy.

Now the established rate of wastage, making due allowance for wounded rejoining from hospital, but still not for the sick, was 260,000 a month, and since the fighting has constantly been growing in intensity and will continue to do so amazingly in a very short time, it is reasonably certain that this rate of wastage has been maintained at least, and will certainly have been found to exceed it during the two months which have just gone by.

It is clear, therefore, that Germany can have no new formations to send against Italy, and therefore, unless she leaves her ally in the lurch altogether—in which case Austria will collapse—she must build up a new army from troops already engaged on her several frontiers, and it seems to me beyond the wit of man even to suggest whence they are to be taken.

It is a case of "catching a Tartar" literally and on the grandest scale, for certainly the Russians will not let go their hold either in Galicia or Poland, nor does it seem probable that General Joffre or General French will allow such a weakening of the line in front of them to take place unpunished.

To be of any use to their hard-pressed ally at least ten German Army Corps will be required, for not only can the Italians keep an army of at least a million in the field, but they have more than a million behind to replace their casualties, and thanks to the lateral railways which connect the two wings of the Army—one on the Isonzo, the other on the Adige—they can play upon their enemy the same game by which the Germans in Poland and Galicia have for so long been able to hold in check the Russians, notwithstanding the fact that the latter had convincingly asserted the superiority over them in each of the three arms—cavalry, infantry, and artillery.

There is no such superiority here in the case of the Austrians, for in fighting records the Italians stand much on a par with their opponents, even when both start fresh and equally equipped. Austrian victories in Italy have invariably been due to superior readiness and superior generalship, but now the readiness is on the Italian side and the Austrians have no Radetsky to rely upon.

When the fresh redistribution of German troops can be ascertained the apparent deadlock which has for so long disheartened the public will be broken and decisive events will begin to crowd on one another.

TALES OF THE UNTAMED.

MARGOT.

Adapted from the French of Louis Pergaud by Douglas English.

CROONING one sing-song plaint from morn to eve, like some old beldame, drivelling in her dotage; crammed, morn to eve, with glutting, noisome offal; forgetful of the savage dignity with which at first she had repelled her gaolers; Margot, her every natural impulse curbed and stifled, had ceased to care.

Gone were the leafy corridors of green; gone the slow-billowing sea of forest verdure; gone the broad-bosomed kindly oaks, on which her youth had wantoned.

The snare, the gun, the birdlime, the decoy—all had been aimed at her in vain; and this—this was the end.

The first short troubled flutter from the nest had brought to Margot her new life.

She was full-fledged. Her parents had forsaken her. No longer might she expect their hourly service—seeds, insects, grubs, thrust down her gaping throat.

She had not turned a feather at the parting. She had not felt the unnerving diffidence which young things, fronted with life's problems, dumbly suffer.

Some instinct told her life was very good.

Before her lay the forest, rainbow-tinted; a brimming store of warmth, and light, and revelry—a treasury inexhaustible.

Borne on the happy tide of circumstance, she drifted, in light-hearted ease, towards a sunny sea.

Full ecstasy of life was hers, full ecstasy of careless mirth, shared with her chattering kin.

This sisterhood, this union in a common life and knowledge, was the keynote of her being.

By this, the life of her community, she judged the other winged folk of the thickets, their likeness to, and difference from, herself.

The ties of kinship disciplined her life, but no such bond as links the migrant hordes to fly, to plunder, or to fight, as one; no such community of lot as fires the crows to help their kin in battling with the hawks.

The mainspring of such interest is the need of it—to fight a common danger.

Nor hawk, nor buzzard dreamt of eating Margot—risky to chase and hard to kill, and bitter flesh at that. The smaller fry were juicier, the finches, whose one weapon was their flight, the squabby, nestling game-birds.

Margot had fed herself at once—for little came amiss to her. She gulped down seeds or berries, worms or insects. She ate whole nests of fledglings, driving the tiny mother off, or even killing her with one fierce peck.

Her shot-silk plumage, ebony faced with white, her narrowing tail that almost overbalanced her, were counted cheap as ornament; her bitter leathery flesh was not worth eating; all that she really had to fear (though this she had to learn) was the chance fancy of some prowling gunner, who fired, of wantonness, to keep his eye in.

The glut of food made jealousy unthinkable. Margot's call-note resounded every hour, a chattering gurgle, tuneful, almost tender, which summoned all her kinsfolk to a feast: acorns gigantic on the broad-backed oak which sentinelled the clearing; or sugary berries on the rowan-tree, close to the four-way crossing of the rides. All crammed their fill, first come, first served, and clacked like men whose tongues are loosed by liquor.

Jacquot the Jay came sometimes, a handsome bird, though heavy, puce-vested, cinnamon-coated, with azure pipings on his wings. He was a gallant trencherman and crammed his gizzard manfully.

Each evening, after thirst was quenched (a social rite at coppice spring, or at the boundary pool) and after short, capricious bursts of flight had stretched their wings and left them widely sundered, rang clear the summons of their chieftainess, the Mother Margot, oldest of them all. And all winged straight towards her elm or oak, whose urgent claims as roosting-place were judged by her wise prescience of wind, or moon, or rain.

Their greetings were soft sizzles of endearment. From branch to branch they tripped and jerked and fluttered, each in her turn evicted from her perch, each in her turn the mischievous aggressor. The tree itself seemed animate. Its boughs and leaves, continually astir, rejoiced in harbouring the sprightly chatter, the bubbling mirth of comradeship renewed.

Then, as the sun sank red behind the trees, and daylight waned, and night's mysterious gloom brought warning of night's dangers, the voices, one by one, died down.

A few disjointed peevish notes dropped lightly branch to branch—the last good wishes for the night, the last appeals for quietude. And then came silence.

The joy of summer sunshine! Long days of feasting and of chattering: days spent in palaces of green, whose galleries stretched endless: days spent in clearings bathed in gold, beneath an azure canopy: days spent with flippant, saucy merles; with loutish jays; with cynic crows; with pert or eringing mavises.

She learnt the trees whose branches were the steadiest; the sheltered dips and hollows; the fresh, cool springs; the friends, the foes, the rivals of her world.

Slowly, insensibly she learnt the mystery of the forest.

The passing of the jays concerned her first.

Morn after morn a silent host of them traversed the forest south-bound. At set appointed hour they checked, and dropped as one on wizened leafless oak, as though this were a predetermined halt. They rested, then pursued their course.

The first day Margot followed them, but as they reached the forest boundaries, and faded away in smoky streamers south, lost heart and sought her trees again.

Eight days their passage lasted, and eight days Margot, curious, fascinated, escorted their interminable columns.

Where were they bound for? Did some all-powerful foe pursue? Some monstrous gluttonous bird of prey? Did the same fear obsess the silent ring-doves, or the grey hordes of starling folk who swung and curled in spirals to the zenith, then, like a cloud-burst, dropped on stubble-field or freshly upturned tilth?

She stared at their battalion movements wondering. Nor did she scorn small trivial happenings. She hungered always for the strange, the new. She hugged the sin of magpie folk, insatiate curiosity.

Squirrel had utterly dumbfounded her. Squirrel flashed wingless twig to twig; spun like a crazy top from bough to bough; looped branches, rippled down the trunk, and suddenly flung skywards, like an arrow. Squirrel had seen the hare and smelt the dog. As Squirrel reached the topmost twig, boomed (the first time) on Margot's ears the thunder of the gun.

Margot took little heed of it. Her curious eyes were fastened on the Man. She watched without misgiving, and unsuspecting of their fateful meaning, the twist which slung the smoking tube behind his turning shoulders, the stoop to lift the slaughtered hare, the busying of his hands about the body.

The smell of powder jangled on her senses, and almost brought distrust with it. Still she kept station on her branch, not troubling to conceal herself, while blackbirds fled with shrilling screams, and crows winged quickly out of range with angry squawks of warning.

Margot had yet to learn that Man meant Danger.

The hare, that dangled limp between his hands, perplexed yet hardly frightened her. The lesson was but dimly comprehended. She could not yet conceive herself the hare.

She was a creature of the skies, far, far beyond Man's grasp. Her sense of circumstance was like the squirrel's.

Squirrel pelts up his tree at Man's approach, whisks round the trunk at some convenient fork, and, with his body hidden, thrusts his nose out. He is too high for Man to harm. He waits for threatening gesture, stares spell-bound at the slow uplifting weapon.

The passing of the south-bound jays was warning of the fall. There was still food abundant; the same fresh springs gushed water: but, with September, came the rains, and, after these, chill, lengthening nights, which draped the trees in mourning.

Daily the throng of birds decreased. The sunless, moisture-laden air condensed in clinging mist, a woolly mist that wrapped about the trees in mournful swathes of silence. The foliage was no longer weather-proof; it chinked and crannied as the yellowing leaves peeled one by one from their frost-shrivelled stalks. The treacherous rain-drops found a way between them, and dripped and splashed in spattering shutes and falls, dulling the plumage, soddening the wings.

Soon there were few leaves left.

Some fell without a breath to quicken them (their hue alone foreshadowing their fate), slowly, reluctantly, on windless evenings.

Others were whirled on high by northern gales, and swept to earth with swish and crack and rattle, which drove the red hares headlong from their forms out to the open plough.

Sadness and Heaviness and Pain had crept into the forest—and Margot and her sisters heard their voices. Instinctively they huddled up together. Dawn found them preening ruffled, steamy plumes in readiness for flight.

Dawn called them East and scattered them, like wide-flung seed, on the plough, and stubble. The change of season brought a change of habit. They sought afield, by choice deliberate, food they might yet have found within the forest. The open ground was sunniest. But there was other cause of melancholy, which saddened them and warped their joyous round.

The fates had leagued against them with the times, and brought a night disastrous to the race.

Margot had winged belated to the pool, whose banks were shadowed by the curtesying willows, whose surface mirrored, in a copper glow, the passing of the sun.

Her beak still stickied with the haws, she dropped among the sisterhood, to drink her fill, and there await the summons to the roosting-place. She lit on strange commotion, took flight to view it better, and poised above a tumult of her kin.

Something was wrong with one of them—with two—with three. They could not take to wing.

Their whipcord legs crooked under them, then lashed out straight to fling their bodies upward. But no light hop or forward flutter followed. Their feet were glued to earth. They bobbed and curtsied pitifully, with flapping wings, with screaming, anguished cries.

Margot drew closer, curious.

What horror had befallen them?

By slow degrees and painfully one prisoner raised a foot. The claws lay close together, stiffened downwards, and from the extreme end of them a slimy tentacle reached earth, fining or thickening as the leg compelled, but never wholly sundered. The other leg stayed fast. To lift it needed leverage from its fellow. To lower this meant glueing it afresh.

The ill-fated three had reached the pond the first, had chosen the three obvious shelving bays.

The others, Margot with them, dispersed about a circling stone-built rampart, new margin to the pool since yesterday. On this they lunched themselves, and with strained necks and over-toppling bodies, risked drowning in the straggling weeds which masked the muddy depths.

They quenched their thirst laboriously, with cough and choke and splutter, then turned to gaze in wonder at the captives. Vainly they circled round and over them. Their presence brought no comfort, no relief. The luckless ones still voiced their woes incessantly, still danced, left-right, left-right, their mad mark-time.

Behind a spur of purpling cloud a blood-red sun went down. Clear from the forest rang the nightly summons. They must be gone, must quit the pool, and seek the chosen shelter. Slowly, unwillingly they turned, and, as they left the pool-side one by one, the abandoned captives whirled their helpless wings, and danced distraught, and screamed forlorn.

At sunrise they were back again. A touzled feather here and there, a nibbled bone, a skull, a claw, told of grim happenings in the murk of night.

Henceforth, for all the magpie race, the pool was cursed. No summer's heat could tempt them to its coolness, to dabble, or to preen themselves, or bathe their glossy feathers.

The days lagged past, each with new trials and set-backs. For now the food was dwindling. The ripened fruits were rotting on the ground. The insects died or hid themselves behind the frost-proof armour of the bark.

Margot and Margot's sisters must need support themselves with chance-found gleanings. Yet self was never uppermost. Above self towered in paramount strength the interest of the race. It was as though some shrill-voiced imp was spokesman of their conscience. Each find was advertised at large, with strident call inviting all and sundry. From every quarter of the wild winged up the starved community. Then and then only might the meal begin—with squabblings round a food-scrap.

A fog obscured day's passing. Alert upon her leafless bough sat Margot, sickened of her fruitless hunting. Her head twitched side to side. This way and that her beady eyes

peered curious. The call-note sounded from a brake of thorn, whose foliage, sheltered by the holm oak's strength, still clung to it forlornly. Margot sized instant answer; then soared above the network of the boughs, and marked two others of her kind, who quickened to the sound.

She tacked her flight to theirs, and, as she crossed the clearing after them, met smoke-wreath and the musty stench of powder. The thunder-clap had had no meaning for her: the stinking smoke was ominous. It brought back memories of the hare.

Onward she flew. Again the thunder crashed. Again the slow stench met her.

She pressed her flight; the three sped on in line; and, for the third time, boomed the deafening roar.

But this time there was more than stench and sound. There was a lurid spurt of flame, which lit the darkening coppice: a whizz of hail about the three, who now flew close together. The foremost of them checked, and spun, and dropped.

A whip-lash cut at Margot's breast, and swept her off her balance. Instinctively she swerved to right herself, and with changed course flew on.

But she had seen.

Two visions pieced together in her mind; two stooping men with smoking tubes slung round them: two soft limp forms picked up by callous hands. The first had been a hare; the second was a magpie.

And Margot understood.

Never before had she seen her own blood. It welled up slowly, crimson drops of it, like berries of the rowan. She watched her clean breast feathers mat together, and staunch the clotting flow.

From flesh wound she learnt fear of Man. Must she fear magpie also? What of the sister, whose call-note had lured her to such welcome? She heard her still, and from the self-same brake—clear, unmistakable. No sigh of wind disturbed the evening's calm; no rustle of slow-dying leaf waved from the bough's extremity its message of farewell.

The call sped forth untrammelled. Pyets and jays and blackbirds flocked towards it. At quickened intervals rang out the thunder of the gun. Only the wary veterans held aloof, and crows, whose ears discerned the man-made decoy.

Margot had not the wit of crow, nor even veteran magpie's wit. To her henceforth all men were surely gunners, all sticks and staves their implements of murder.

Sportsman she shunned, and wayfarer alike.

Daily her mind brought knowledge of fresh dangers. There was the owl, an enemy of all nestlings, and so an enemy of the race. And oh! the mobbing of him. Shipwrecked in broadest daylight, rolling his eyes, wing-spreading, backed against the trunk. The day-birds flocked to haze him, with whirr of wing, with mocking, strident screams. The red-breast all aflame with insolence; the ebon crows with hungry, prying eyes; the linnets, finches, tit-mice—all letting "dare not" wait on "will."

And suddenly the racket of them ceased. Their circling widened to a prudent distance, and, in a moment, fied afield. A crow had signalled danger. Thundered the gun, and two that loitered, dropped—the victims of Man's guile once more, the dupes of a stuffed enemy.

The sameness of the dreary, trailing days was broken by the snow. All night it fell, slow, feathery, dreamy, noiseless. It shrouded earth; it choked the water-holes; it limned each bough in white, against the morrow's blue.

Margot could find no food in it, so winged towards the village. She sneaked behind the orchard fence, she scanned the paths, she pried about the walls.

Patches of soil the snow had not yet mantled lay on the hedge's shelter-side. She flew to these at first, glancing askance towards the shuttered houses. A fresh turned mole-hill starred the white, and from it whiffed the scent of flesh. Good fortune this—a lump of bacon-fat, food for one day at least. She drove her beak at it and tugged.

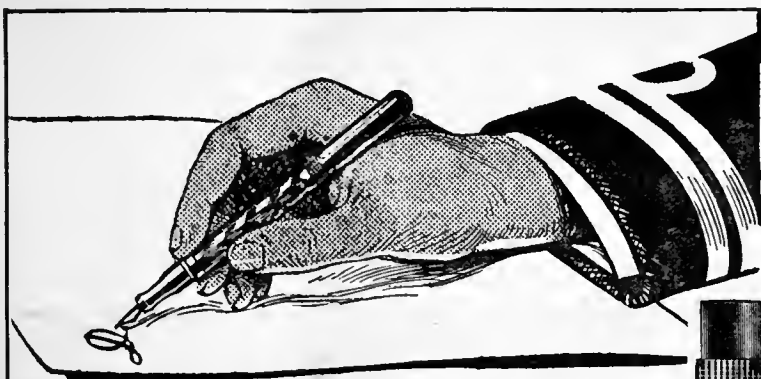
(To be continued.)

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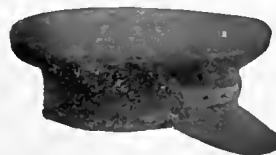


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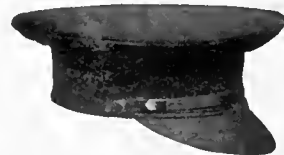
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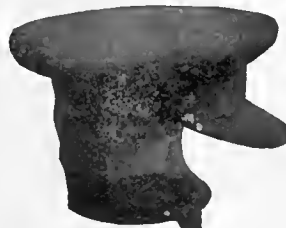
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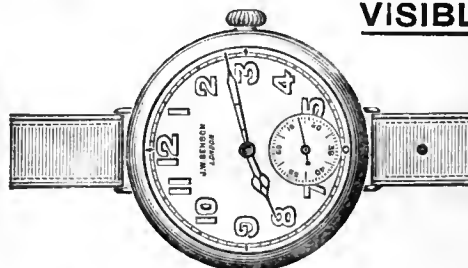
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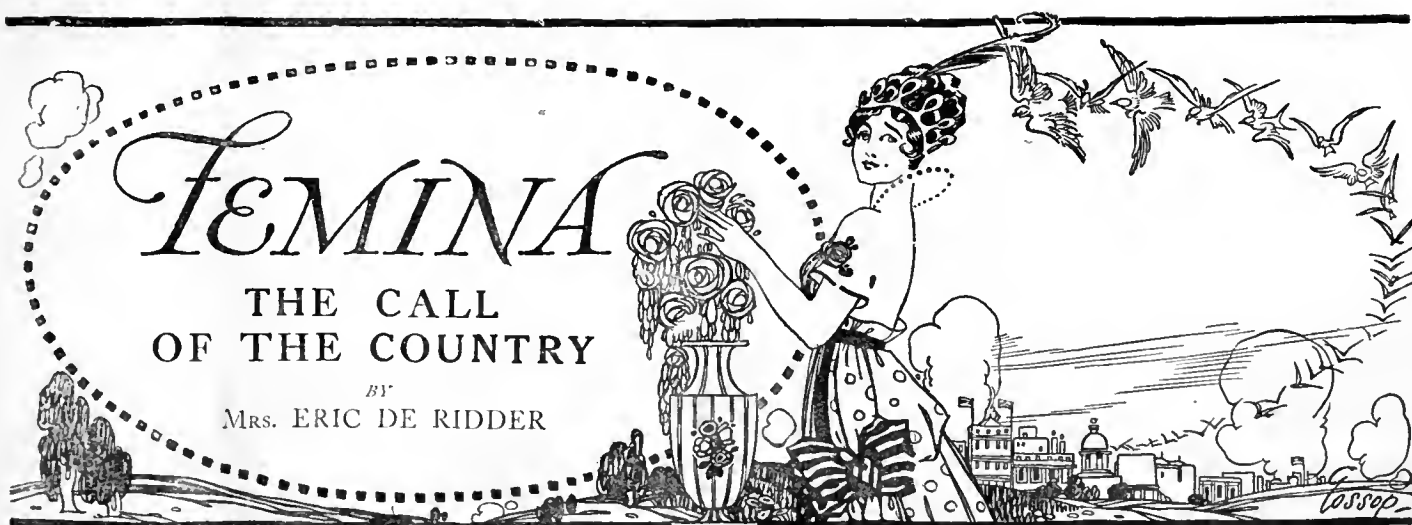
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ONCE upon a time a great poet bracketed England and April in an exquisite snatch of verse, one which we all know so well, that it is needless to repeat it here. And by reason of the beauty of his words England and April will always be associated together. Yet if most of us were given the choice we should probably not object to the spending of April far away from our native shores in a place of less capricious climate than that vouchsafed by the tearful month.

But in June—when June behaves—it is a very different matter. June and England are synonymous terms of beauty. In the early days of June, when the trees are strong with their fresh young foliage, when the chestnuts are in perfect candelabra form, when lilacs, near the eve of waning, give their subtlest fragrance, nothing can approach our land. It is unique, it is a priceless possession, it is good to live in.

With ghastliness past all description as part of our daily existence, it is a relief to turn, no matter for how short a time, from the thoughts of war, and nothing but the war. Not for the space of one half second are we allowed to do so in London. If we want to give our minds and hearts a rest in this, or indeed in any other great town, we must take our telephone off its stand, refuse to admit callers, and by no manner of means go forth into the streets, for the streets simply serve as vast hoardings for war news. Even if the gruesome side of war does not for the moment present itself, it is still with thoughts of war that we are presented. We can see groups of khaki-clad men drilling in the parks, men that possibly in the shortest space of time from now will abandon these fair scenes for ones of destruction in Flanders. We meet at every turn things that echo the war. It is impossible to escape the all-pervading thought in all its many guises.

The Contrast

That is the reason why the inveterate country-lover finds that he had yet much to learn about the scenes in which he delights. Much though in years gone by he appreciated rural things, it has been left for this year of sharp contrasts to teach him their fullest value. And those to whom formerly country matters were as a sealed book, have opened the volume and started to turn its pages. They find peace there, or at any rate the comparative peace, which is all most of us at this moment can hope for. The country stands out in welcome relief from the strident clatter of great towns. It has come into its own at last. There is no agitation amongst the great forests of trees, with their galaxy in varying shades of green. They stand immovable; even the strongest gust of wind serves but slightly to ruffle them. There is peace and strength in the very sight of the great trunks, and when as in favoured beauty spots, they are embedded in a wide carpet of bluebells, or in a thick undergrowth of moss and bracken, nothing is omitted to please the imagination.

An American woman, who lived on her nerves if any woman ever did, once gave me the following information. When she found, or fancied she found, things had grown past bearing, she took a first-class railway ticket, secured a carriage to herself, by fair means or foul, and started forth on a journey through some lovely part of England, or wherever she happened to be. The recipe always worked. She returned home, once more a reasonable being, and in infinitely better temper and spirits. Besides, what is more to the point, she was bearable once more to live with, which she herself was the first to admit was not the case before. At the present moment, were my American an Englishwoman and were she in England, she would probably be travelling all day long. With the present claims upon our railway system we may

be thankful the United States in general, and Washington D.C. in particular, have once more claimed her as their own. But this has nothing to do with the subject in hand.

The Rural Life

I have another woman in my mind's eye, who since the war began has started chicken-farming. In days, which in reality are such a brief while ago, but seem to be separated from us by hundreds of years, her life was made up of one continuous round of social engagements. She was seen everywhere, at places at home during the season, and at places abroad where people congregate at other times of the year. The usual life of the woman of leisure and means, who enjoys the society of her fellow-creatures, seemed to have become second nature to her. She has three sons, all of whom are serving their King and Country in some capacity or another, and no other children.

As soon as they scattered to different parts of the fighting area, she took to a small house with large garden in a remote part of England, and incidentally to chickens. These she declares she is rearing not only for pleasure, but for profit. How these profits are arrived at it is past me to imagine, for the chickens seem to the unsophisticated mind to be lodged in a kind of palace *de luxe*, and the egg-laying to be disappointingly small. Their owner, however, avows that these profits exist, and since she is devoting them to three or four different charities, and I have reason to know that these have received cheques from her in the course of the last few months, one must assume that they do. At any rate they do in her fertile imagination. And since the charities benefit, and she herself is given distraction in the intervals of waiting for news from the front, all gets what they require. Not excluding the chickens themselves, who until the day of reckoning, when they leave their feathered nest for food, and all undoubtedly live in fatness and contentment.

A Peaceful Spot

In the meanwhile, the small house is all that a small house in the country should be. The lattice windows have leaded panes, and those of the rooms upstairs open to show a vista of far off wooded hills with a gleam of water in between, where the river runs its silvery way. Inside there are all kinds of quaintly patterned cottage chintzes, with just the amount of bright colouring that one looks for in a country chintz, and is disappointed to find lacking. Were it not for the sword of Damocles hanging overhead, June in this quiet spot would give an idyllic existence. As it is life is made more tolerable. And for the smallest of mercies we have learnt to be duly grateful.

* * * * *

A short while ago, in one of my articles, I suggested that an organisation should be started, enabling women to take the place of men, called away on active service. A correspondent has kindly written to tell me that one exists. It is called the Women's Defence Relief Corps, and has been started by Mrs. Dawson Scott. To help the country in its hour of need is the one aim and object of all belonging to the Corps, and the name that has been agreed upon for its members, is the simple and explicit one of "Helper." A farmer has just engaged a band of Mrs. Dawson Scott's "Helpers" for hay in Middlesex at men's wages. She hopes to get many women in England roused to the fact that they can be of great help with the hay and corn harvest, that is so vital a matter. The Headquarters of the Corps are at "Harden," 6, King Street, Southall, Middlesex, and from here a hand-book with full information is issued.

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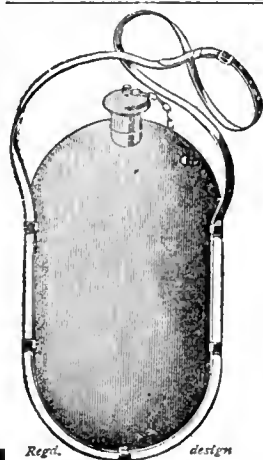
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AN ISLAND UTOPIA

By K. RICHMOND

IT would be interesting to know how the England of to-day would strike an observer who could come amongst us ignorant of all that has happened in the last ten months. National change has to proceed by steps, though the steps be of the swiftest; it has to be, in the strict sense of the word, gradual. Even a revolution of thought, a complete *volte face* of public opinion, has always been prepared by a long series of small and often unperceived changes, slowly accumulating until the balance tips over. And revolutions of thought are essentially foreign to the English genius. We take things as they come, and adjust them as they come—a practice which has long made us the despair of the would-be-picturesque demagogue, who lives for, and by, the moment of crisis. And for that reason we are perhaps the slowest people in Europe (with the possible exception of the Russians) to realise exactly where we are at any given moment. It is always open to our public men, as in these days, to hold and to utter diametrically opposite views upon the state of mind of the nation; and we are so used to the absurdity that it seldom raises a smile.

* * * * *

It might be an advantage to us to employ a public servant whose duty it would be to live out of England, returning periodically to receive his impressions and to record them for the general benefit. This function has at times been admirably performed by Irishmen; but some Irish critics suffer the disability of being too clear-sighted. When a man's mind is so luminous that all the facts are transparent to him, it is only a step further to forget that the facts are there at all—to "see through" them with that piercing insight which discovers precisely what the critic expects and wishes to see. The candidate for our imagined office of National Critic would have to be of pure English blood, a student of history, and a man who had been, in his time, familiar with every rank in the social scale. He should belong to no party, and should have no particular financial or class interests. And most certainly he ought not to be too clever; he should be "able"—a word which has come to characterise a typically English form of mental competence. Even in war time such a man might be spared from other forms of national service; indeed, in war time his function would have a doubled and redoubled value. It is another question where, in war time, he could go for that complete dissociation from daily detail which would be part of his duty; he needs entire freedom for thought and reflection, as well as unsophisticated surroundings.

* * * * *

There is a little island in the Atlantic, set, as though by an inversion of the jeweller's art, like a spot of gold in a sheet of sapphire; it is unknown to the tourist, and its name is kept secret by the few who know and love its unspoiled beauties. Here we will send our seeker for the unsophisticated. After a night's voyage, from the liner's port of call, in a tiny steamer that appears to be made of japanned tin, from whose deck he has watched the leaping phosphorescence fly past like wreaths and coils of luminous smoke, he is carried through the surf and to the shore by an islander; an islander dark-skinned but grey-eyed, of surprising lankiness and still more surprising strength. He is assured that mules shall be duly saddled and laden for his journey to the hills by the time his simple breakfast is eaten; but the heat has grown to its sweltering climax of noon and begun to decline again before the cavalcade is on the move. Later, he will learn that the Island is blissfully devoid of the time sense; its "now" means, usually, to-morrow; its "to-morrow" means never. But long before completing this discovery he will himself be under the spell, and the rich days will be flowing past unpartitioned and unnumbered. He first touches upon the bedrock of old human wisdom in the laconic talk of the grey-haired muleteer who trudges by his side; and upon the bedrock of natural wisdom in the behaviour of his invincibly opinionated mule. "You would now both be dead, if he had obeyed you," is the muleteer's quiet comment on one occasion when the mule, open-mouthed but imperturbable, has disregarded the dragging rein; and our traveller views the chasm with a shudder, and the mule with a new respect.

The crest of the pass attained, the western sky beyond is aflame with that afterglow peculiar to the horizon of the sub-tropical Atlantic; gilded crags sweep down three thousand feet to a shelving plain which is a sea of almond blossom; twenty miles further, and six thousand feet below, the veritable ocean basks and gleams. The descent into fairyland, through gradually enshrouding night, becomes mysterious, and the sure-footed mule a magician disguised. Carrier women, basket on head, come swinging, bare-footed, down the precarious path; at a word from the muleteer they light small torches made from resinous pine-splinters, wrapped round with leaves that burning may be slow. Thus revealed, they stand out against the darkness as glowing portraits of womanhood, broad of brow and hip, and deep of bosom, erect and quiet-eyed. At the foot of the crags they take a side-path for their own village, calling out good-nights. By midnight our traveller is on the path that leads to his minute inn, inhaling deeply a faint breeze that comes, now fresh and cool as spring water, now warmly laden with perfume from the orange trees on either side; and soon the awakened host and hostess, welcoming but drowsy, have fed him with omelette and light wine, and he is asleep—and as far from the fret of civilisation, in body and in spirit, as we could wish.

* * * * *

His sojourn in the Island will not rub off the bloom of the first impression. It is a place whose natural beauties do not cloy, but quietly sink deeper and ever more memorably into the consciousness. And it is the home of an extraordinary and an abounding human simplicity. He will discover that there are no rich in the Island; and no poor. From time to time he will meet with men and women, old and outworn, who have no younger relations to support them in their decline; these are the newsmen of the community, and they totter from village to village with tidings of birth and death, prosperity and vicissitude, always finding a hospitable roof and a welcome for their wise garrulity. He will find no traces of government that anyone need bother about; no crime, and no police. In the course of long and rambling discussions with the innkeeper he will begin to realise a philosophy that concerns itself but little with any but the essentials of life, and will find as much difficulty in explaining or justifying to him many of the preoccupations of Europe as did Gulliver in parrying the questions and criticisms of the horse-king. He will discover a courtesy that knows neither subservience nor condescension, and an openness of speech that is wholly unconscious of its apparent daring. He will rediscover the essential human subsoil—and that discovery is the main purpose of his exile. It is needless to labour the fact that in the process he will also rediscover himself, an achievement which will not be without effect upon his subsequent usefulness.

* * * * *

Then he will return, his mind untrammelled and impressionable, all equipped to diagnose and interpret the national symptoms of his own people. . . . All this is no more than an airy speculation; for the business of our imagined official is everybody's business, and it is no good giving everybody's job to one man. All can in some degree, if it be only in thought and imagination, escape the trammels of the crowded hour, when their duty is not calling them to sterner tasks. Beneath all the anxieties and urgencies of the day there flows the quiet, purposeful current of English life; and in the English countryside there is peace and beauty and the magic of human tradition to be realised, no less than among sub-tropical hills. Some are ashamed of being normal in war time, and would have us all in hysterics if they could have their way. "Be different, somehow," they seem to say, "even if you cannot be useful." Meanwhile, it is the men who think less of their emotions than of their heritage who are doing our country's share in the winning of the war, and the nation is realising its purpose and its selfhood through those to whom the meadows and moors, the homesteads and hamlets of England, are full of a still and an eternal meaning.

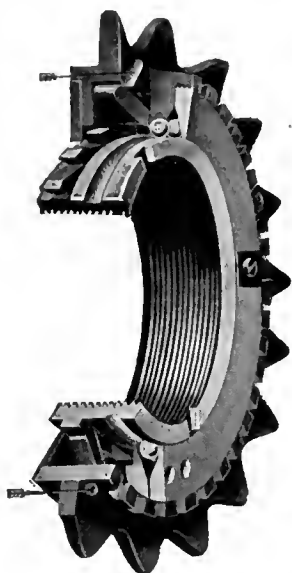
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THE WAR BY LAND.

By HILAIRE BELLOC.

NOTE.—This article has been submitted to the Press Bureau, which does not object to the publication as censored, and takes no responsibility for the correctness of the statements.

In accordance with the requirements of the Press Bureau, the positions of troops on Plans illustrating this Article must only be regarded as approximate, and no definite strength at any point is indicated.

THE really important thing which has happened in the campaign this week—that is, up to the news received upon the evening of June 8—is the evacuation without disaster of the salient of Przemyśl.

If the campaign upon every front be regarded soberly in its largest aspect, no other event connected with it during the last few days bears comparison with this very considerable feature. For it was doubtful during a whole fortnight whether the salient of Przemyśl held by the Russians right in front of their general line might not lead to the piercing of that line.

Next to this matter we must note in order of importance the violent effort proceeding from Stryj whereby the enemy is attempting to force the Russian line on its left centre, having failed to force its right centre at the salient of Przemyśl.

With regard to this enemy success we only know that German and Austrian forces have established themselves just beyond the line of the Dniester. There is, of course, no sort of claim as yet that this forcing of the river threatens the whole line. But we shall do well to fasten our attention upon the enemy's success here in front of Zurawno because it may lead to bigger things in the near future.

Upon the analogy of the similar effort nearly a month ago in front of Jaroslav and the crossing of the San, we might discount this new enemy

success. But all that is conjecture. It is our business rather to appreciate exactly how much the enemy has here done.

In the other theatres of operations there has been a very violent and quite inconclusive action in the Gallipoli peninsula. I will deal with this in its order, though briefly, for it needs no diagram and is simply a case of an assault directed against a line which is not yet pierced and against a position which still stands firmly.

It would seem, as we shall see later, that the real problem in the Dardanelles is the possibility or impossibility of cutting off the supplies for the enemy in the Gallipoli from the Asiatic shore.

Upon the Austro-Italian frontier nothing has been doing upon which one can base any effective account of the operations. Upon the side of our Ally mobilisation is still proceeding; upon the side of the enemy no considerable forces have yet been gathered, even for purely defensive purposes. All that can be discovered—as we shall see later—is that the Italian covering troops have occupied, as they were bound to do, the passes leading into the projecting "bastion" of the Trentino: have, with rather less advance, proceeded against the passes in the second sector of the frontier, the Carnic Alps, and have attempted their chief preliminary effort against the line of the Isonzo, occupying the Monte Nero, and attempting to turn the whole line of the Isonzo.



THE EVACUATION OF THE SALIENT OF PRZEMYSL.

It was pointed out in these columns many weeks ago that the salient of Przemyśl was a serious danger-point upon the general Russian line. If we regard that line in its entirety, as it was taken up at the end of the great Russian retreat through Galicia—that is, as it lay in the middle of May, three weeks ago—it is, roughly speaking, the line also of the San and of the Dniester Rivers, which two watercourses are joined geographically by the course of the Wiznia, a stream not shown in the accompanying sketch, but running into the San above Jaroslav, pointing with its course directly at the Dniester, and filling the gap between that river and the San.

The line of the San, the Wiznia, and the Dniester is one continuous defensive natural line, which stands in front of Lemberg, and protects the railways leading from the Russian bases up to the front.

From that line the semicircle round Przemyśl projected in a dangerous salient. Why such a salient was dangerous was discussed in the last two numbers of this journal. A salient always requires for the protection of its long contour a larger number of men than would be required for the protection of the direct line across its neck. It is vulnerable to attack against either side of that neck. If the neck is pierced the whole of the salient and of the men and guns and material contained in it fall into the enemy's hands, and it is even possible that the double pressure upon either side of the neck, if it be successful, may carry the enemy right through the main line behind it, and pierce the resistance of those whom he is attacking. That is why, in the foregoing sketch, the neck of the salient at Przemyśl was marked with a D, as indicating the danger-point existing during the last three weeks upon the Russian line as a whole.

When this salient first appeared in the middle of May upon the Russian line, it was admitted in these columns that the writer could discern no sufficient reason for the retention of so very perilous an extension to the general defensive position of our Ally. Further news enables us to fill up this gap in our knowledge, and we can discover why the salient of Przemyśl was retained. It was held, not for sentimental reasons (which should surely be of no effect in a campaign of this magnitude, and threatening such dangers, and promising such fruits as does the great war!), but in order that there should be ample time to remove from within that railway junction all stores and rolling stock, and, further, in order to be able to remove (a much lengthier business) such heavy artillery as the enemy may have left intact when he capitulated upon the 22nd of March.

It must be clearly understood that there were no munitions for these guns, the enemy having, as a matter of obvious necessity, destroyed his munitions before capitulating. And it must further be understood that the permanent works of the fortress had also been destroyed before the capitulation, so that Przemyśl was not a stronghold at the moment when the Russians decided still to preserve it as a salient in their general line. Such defences as the Russians threw up were evidently, field defences exterior to, or improvised upon, the old ruined permanent works.

With all this clear, we can appreciate more

or less what happened. For a fortnight the enemy forces chiefly concentrated to the north and south of the "neck" of the Przemyśl salient, somewhat exposing themselves to attacks upon their communications upon the north, at least round Jaroslav. Such an attack the Russians could not press sufficiently to imperil the enemy's advance, but, on the other hand, the enemy obtained no decisive result against the neck of the salient. He lost very large numbers of men in direct assault against the southern and the northern face of the "neck," and could not have reduced it to a less width than twelve miles. He claims to have dropped shells on the railway leading out of Przemyśl, but it is unlikely that he did any damage by this long-distance fire, because we know that the mass of the material within the town and surrounding it was successfully withdrawn.

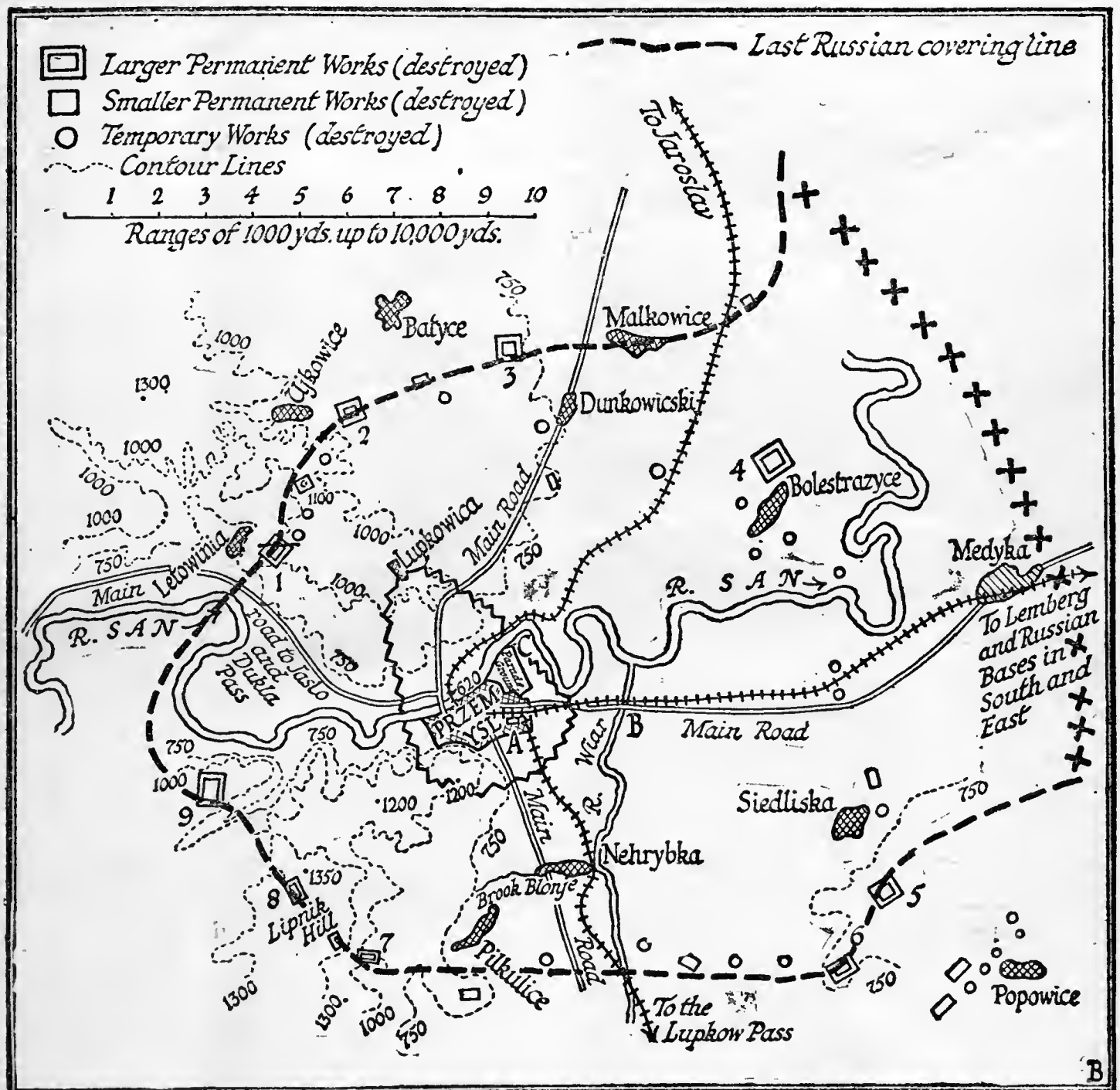
In the last days of May the Russians had allowed to remain, apparently, no more than a thin covering line coincident with the heights upon which the old permanent fortifications had stood before their destruction.

During the Saturday and the Sunday, the 29th and 30th of May, the last remaining defence of the field works established upon, or just exterior to, the old permanent works of Przemyśl gave way before the direct pressure from the west, north, and south. It was late in the afternoon of Monday, May 31, that the fort marked 9 upon the following sketch was evacuated; but it was recaptured and held until nightfall. The whole process was obviously no more than the covering of the general Russian retirement. In the same evening the works marked 2, 3, and 4 in the above sketch were carried by Bavarian infantry and permanently held. With the next afternoon, Tuesday, June 1, the southern forts (7, 6, and 5) were evacuated, and before dawn on Wednesday the enemy entered. The Russian line by the week-end had straightened out and shortened beyond the San, passing through Medyka, as does the line of crosses in the following sketch, and the salient of Przemyśl, the rolling stock, stores, and probably the greater part of the artillery within it being now withdrawn, was abandoned by our Ally.

I will not further labour the point that the straightening of the line and the giving up of this salient is strategically of no advantage to the enemy whatsoever. The enemy not only has not pierced through the Russian line at this point, but has given up the attempt to pierce through here. His real effort is now being directed at a point some forty miles away to the south and east beyond the marshes of the Dniester, to which point we will next turn.

It is an effort based upon the town of Stryj, which he captured the other day (getting at the same time, unfortunately, control of the great oil-field), and it is for the moment in front of Stryj and against the Dniester line that he is attacking for the third time (the first was in front of Jaroslav, the second was at the salient of Przemyśl) to pierce our Ally's line. *Unless he pierces it, let us always remember, he has failed in his strategic objective.*

This effort, based upon Stryj, stands to the whole line in a fashion characteristic of every effort the enemy has made East or West. Every one of his great efforts to break the containing



line, whether in Flanders or in France to the south, or in Northern or Central Poland, or in Galicia, has had this feature in common—that it has been a sort of alternative striking, first here, then, finding he could not break the line, there. Take the line as a whole from, say, Czernowitz (C) to a point beyond the Vistula at B, a matter altogether of nearly three hundred miles, and you will discover that the enemy's efforts have been made successively in one point after another of the Russian centre. First he strikes against Jaroslav (1), gets over the river, but does not go

more than a mile or two; that is the effort of May 14-17. Then he notes the salient of Przemysl and tries to cut it off from the north and the south (the arrows 2 2); the Russians foiled him by evacuating the salient in good order in the last few days. Next he strikes the other side of the marshes from Stryj at the crossing of the Dniester at Zurawno (3). Here, again, he gets across the river, as, nearly a month ago, he got across the San at Jaroslav : but whether he will go further we have yet to see.

This crossing of the Dniester at Zurawno is worth detailed examination.

The great marshes of the Dniester block all attack across the upper course of that stream. If below them you try to cross the Dniester from the base of Stryj, you are curiously involved in a double crossing; for the rail which supplies you, and the road also, runs in such a fashion that it crosses both streams, the Stryj and the Dniester, near where they join. So if you try to fight your way across the line there by Zydaczow you have two obstacles to surmount successively. But if you attack a little lower down, at Zurawno (not a day's march off), you have the advantage of missing another small belt of marsh, you have a good road from the rail-head, and high ground just beyond



THE DARDANELLES.

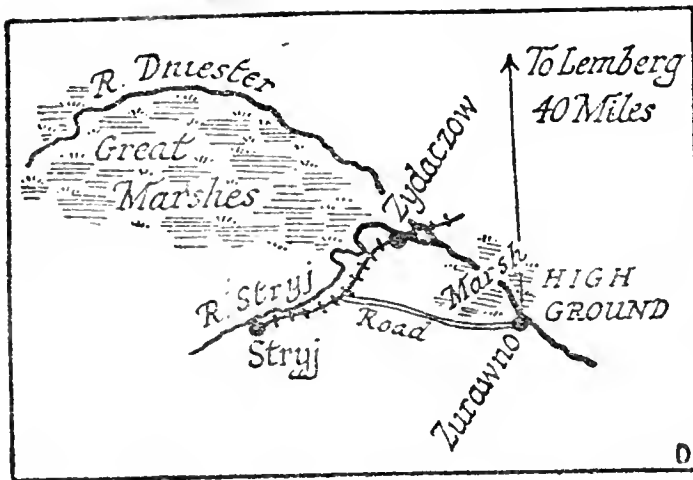
It is significant of the extreme difficulty of solving the problem of the Dardanelles that the second great assault was not delivered until exactly a month after the first attack upon the Achibaba position, which, as will be remembered, took place upon May 4-6.

All that can be said about this second effort is that it has left the position intact. What losses it may have inflicted upon the enemy, how far the bombardment may have shaken his defences, only those upon the spot can tell. But the line still stands unbroken; the first of the two great positions with which the enemy defends the Narrows is intact; the Allies have not even reached Krithia village upon the slopes of the Achibaba, and we must wait for a further effort before a decision even as regards the first position is in sight.

Meanwhile it may be worth noting that the crux of the problem lies in the ability the Allies may discover of cutting the enemy's supply across the Straits. The British submarines have already rendered transport through the Sea of Marmara impossible. It remains to be seen how far their effort, or that of the indirect fire from the Fleet, can interfere with the passage of reinforcements and munitions for the enemy from the mainland to the Gallipoli Peninsula across the Narrows. In the absence of a really large siege train, wherewith to reduce the positions directly, such a hampering of communications, though tardy, would seem to be the only solution.

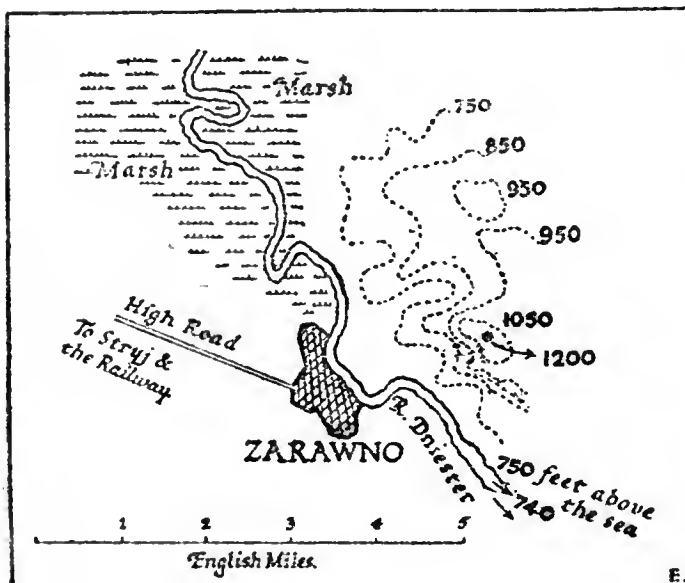
THE ITALIAN ATTACK UPON THE ISTRIAN FRONTIER.

The covering troops of the Italians, behind whose action the main army is mobilising, proceed methodically to occupy the passes which dominate the Lombard plain. Whether they will be able to hold these or not when the enemy has brought up his own main force only the future can show. As we know, the Italian covering troops have already occupied the summit of Monte Nero, on the far side of the Isonzo, in the mountain country, from which summits their artillery

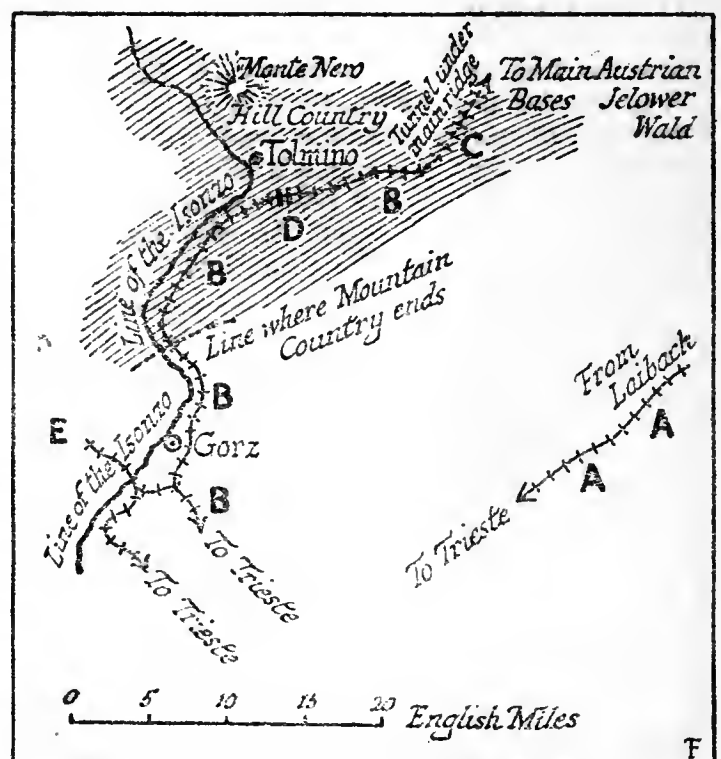


the river upon which to establish yourself if you succeed in forcing the stream. It is an excellent choice for forcing the line of the Dniester, and it is only about forty miles off from Lemberg, though the communications by road are not good.

The details of this crossing at Zurawno may be appreciated from the subjoined sketch. The Dniester flows, immediately above the town, through marshy districts which make an approach difficult, and a footing upon the far side impossible. But just at the town itself you have a tract of dry ground across which leads the road from



Stryj and the railway only a short distance off, not more than a day's transport for the munitions of the heavy artillery that prepares your crossing. Further, upon the eastern bank beyond, you have high ground, the contours of which are roughly indicated in the above sketch in feet above the sea. The river being here some 740 feet above the sea, the first contour line represents the beginning of the hills, whose summits are from 200 to 400 feet or more above the water. These summits, or the slopes of the hills, the enemy has now gained. It remains to be seen how far he will be able to press forward beyond the obstacle which he has successfully surmounted. Hitherto it has always been discovered that upon his getting more than one easy day's journey from the railway, with the power of munitionment to his great superiority in heavy guns on this front, which the railway gives, the enemy can no longer go forward. We must hope that it will be another example of the same holding up of his advance.



largely commands the valleys to the south and east beyond the town of Tolmino. Why have they attempted this turning of the line of the Isonzo through the mountains upon the north?

In order to answer that question one must recall the point which was emphasised here last week, that *the war on the Austro-Italian frontier will necessarily be a war for railways*.

Now, observe how the railways run just here upon the frontiers of Istria.

From the Austrian bases to Trieste there are two lines—one coming through Laibach, far off to the east, at present out of reach of the Italians (and marked A A on the preceding diagram); the other comes directly down by the shortest road from the north, through the long tunnel under the Jelower Wald at C, and so comes down by B D B to Trieste.

Now, an attempt to cut this line by attacking anywhere along the lower Isonzo would mean trying to force the very difficult positions in that valley, which are probably well defended. Gorz and its fortification protects the main junctions at the foot of the Alps and closes the gaps. But by getting right up into the hill country and coming down upon the railway to Tolmino at such a point, say, as D, it is hoped to cut the railway,

to paralyse the supply of Gorz, and to halve the supply of Trieste. All that district is highly mountainous—the summit of the Monte Nero (which the Austrians call the Krn) is 6,000 feet above Tolmino in the valley—and it is probable that the vigorous effort by the vanguard of the Italian force is made here because they found hardly any defence prepared in these northern hills.

It is evident that to cut the railway at D would be to destroy its value for Trieste altogether. The other line coming in from E comes in from and is held by Italian territory. It does not communicate with the Austrian bases at all.

To cut the railway B B at D or thereabouts is not to isolate Trieste, because there exists the alternative road A A; but it prevents Trieste having two avenues of communication and it cuts the shorter and more important one—so important that in the creation of it the Austrians have been at the pains of tunnelling under the main range (the Wochein Tunnel—four miles long). Further, the danger to the railway at D is difficult to meet. Reinforcement can only come up from Gorz by the narrow gorge of the Isonzo—a dangerous and insufficient avenue of approach.

A GENERAL SURVEY.

FOR some reason or other, in part because the siege work in the West has lasted just long enough to try public opinion, there has appeared in the last week or so an uneasy spirit which was absent during the earlier spring months. The first consequence of this uneasiness has been a disarray of judgment. The firm major lines upon which all sound opinion should base itself have got blurred. You hear people asking perfectly meaningless questions, such as, "Is it true we have not enough shell?"—one can never have enough shell. Or, "When will the war come to an end?"—to which on the face of it any answer would be ridiculous.

In a word, educated opinion in this country has quite latterly fallen into something of the mood which you will find present in men who have undertaken some financial speculation when that speculation has not yet decided itself, but has lasted longer in its development than they had expected. Commercial men so situated often show this same vacillation of emotion and suffer this same loss of grip which general opinion to-day is in danger of suffering in connection with the vital matter of the great campaign.

We all know that in such commercial ventures the rule is to bear steadily in mind the main factors which moved our judgment when we first entered the speculation, and that the most important point of all it not only to face reality where reality appears adverse to our schemes, but to appreciate it as a whole: favourable, adverse, or neutral. Mere delay (and very often the delay is not greater than experience warranted) should not be allowed to disturb our conclusions.

This disarray of civilian judgment having set in (the process arises by much irresponsible writing and talking from men not competent to judge), the best way to check it is to recapitulate, for the purposes of the present moment, those

main elements in the campaign upon which alone any ordered judgment can repose.

Only when we have grasped this once again can we proceed to a true estimate of the present position.

I shall beg my readers' leave in this and succeeding numbers of LAND AND WATER to present, as I see it, the whole situation at this moment. It may be that in the course of such a presentation very great happenings will make the drab presentation of the campaign as a whole seem unworthy of the moment. It may be that a continued and wise postponement of the great offensive will leave room for such a summary. But in any case a summary of such a kind is essential as a corrective to too great a doubt bred by delay, as it is to too great a hope bred by the very vigorous action immediately before us.

For the purposes of presenting such a survey I will begin at the beginning, and, at the risk of some repetition, first lay down the political foundations upon which all our calculations upon the war must be built.

There were three great political military ideas upon which the enemy acted when he proposed this enormous conflict.

There was first his intention to take the offensive against Russia and France, after a preparation of three years—a decision taken nearly four years ago. There was, secondly, the enemy's conception of how alliances for and against him would stand this adventure of his when he took the field. There was, thirdly, his judgment, not nearly so unwise as opinion in the West at first imagined—that is, that his attack would be immediately successful.

I will deal with these in their order.

1. The enemy consists in a certain group, generally called "the Germanic Powers," and consisting politically of 123·5 millions who are

subject to the two ruling houses of Hohenzollern and Habsburg-Lorraine. Though called "the Germanic Powers" (for the whole effort is a German effort) the enemy includes great bodies of Slavs and Magyars, and can command the military service of a certain number of Italians as well, who happen to lie within the artificial frontier of Austria. They, further, can conscript into their armies more or less unwilling Roumanians, to the number of about 300,000, who also lie within their frontiers, and a smaller number of even more unwilling Serbs.

This combination of the two Governments, that of the German Empire and that of Austro-Hungary, which was almost the servant of the German Empire in the matter, proposed to challenge, after the harvest of 1914, the Franco-Russian allies.

This determination was arrived at in the summer of 1911, the time required for the preparation for such a great modern campaign at one's own chosen moment being roughly of three years.

In expectation of this campaign the "Germanic Powers" in question made ready not only those materials and forms of organisations which are universally known to be necessary to modern war, but also made ready in a special fashion certain materials and forms of organisation peculiar to those theories of war which they had espoused, and which their chosen enemies had upon the whole discouraged.

What those theories of war were and how the "Germanic Powers" were aided by special preparation we shall see in a moment. Meanwhile we found our general survey of the present situation upon this fundamental truth, which I repeat.

The "Germanic Powers," under the direction of Berlin, determined three years ago (in the summer of 1911—Agadir) to challenge and to defeat the Franco-Russian combination upon the Continent of Europe, and they fixed the date upon which this victory of theirs should be entered as the period immediately after the harvest of 1914.

It is in a sense true to say that their chief objective was not France, but Russia. They feared the growth of Russian power, for they felt Russia to be a new country rapidly developing, and their domination over the Slav populations, of which Russia is the champion, urged them to strike before she should have developed her communications and all her other military resources.

But on the other hand it was necessary for them, from their standpoint, to get France out of the way, because, from that same point of view (a distortion the absurdity of which we are not here concerned with), France, though an aged and decrepit society, would be an impediment to them until she was convinced by defeat that she could no longer count in Europe. Further, the immediate defeat of France upon the West was a prospect reasonably probable. A highly organised country very much inferior in numbers to the "Germanic Powers," and with its capital a week or so from the frontier, could surely be immediately and decisively defeated. This done, Russia would be alone in the struggle and could ultimately be convinced of her inability to disturb the hegemony in Europe of the Germanic Confederation.

2. This calculation, matured during the course of the three years between the summer of

1911 and that of 1914, wisely discounted the aid of Italy. It was judged that Italy would remain neutral; it was also hoped, rather than judged, that Great Britain would remain neutral. Against the possible entry of Great Britain into the field the enemy, however, did make every precaution. He organised a financial situation destined to hit the City of London very hard should Great Britain support those who were virtually her Allies when the war broke out, and while he did not act as he could have done, distribute commerce destroyers with exact care in that period immediately before the outbreak of war, he yet took every precaution to safeguard his naval power and organised his machinery for the production of the main instruments, from the submarine to the airship, where-with Great Britain should be attacked. He also, though in characteristically clumsy fashion, prepared the ground for anti-British manoeuvres in neutral countries, particularly in the United States of America.

The entry of Great Britain into the campaign was a surprise to the enemy, but it had to some extent been discounted. That the Italians, with their conscript system, their considerable reputation as engineers and producers of material, their excellent field artillery, and their two millions of trained men, would enter the field before the end of the war against the enemy—*this* the enemy never believed at all.

3. The enemy took the field with the moral certitude of victory from the most impartial standpoint, and with a still further certitude of victory from his own particular standpoint.

His whole certitude was based upon the factor of numbers. He would attack in the West with an immense numerical superiority. He would almost certainly arrive at his decision in the West, therefore, in the first three or four weeks of the campaign. Meanwhile he had reserves of man power at least equivalent to his large trained body, which reserves of man power he could train and put in the field in successive batches as the power of Russia upon the East might slowly mature and become menacing. Russia would gather her forces very slowly, because she had had communications, an undeveloped industrial plant and material, and was, further, a poor country in proportion to the size of her population. And while Russia was thus very slowly gathering her resources France would be defeated, the winter would be coming on (during which Russia could get no aid from abroad), and before that winter was half-way through the whole campaign should normally have been decided.

We must remember, in this connection, that the "Germanic Powers" were certain enough of forbidding the provisioning of Russia through the Dardanelles, because they were certain enough before the full winter set in of procuring by purchase the adhesion of the cosmopolitan financial clique which has governed the Turkish Empire since its late revolution.

This attitude of the enemy was based, we must remember, not only upon the false analogy of 1870, with its rapid and crushing successes, but also upon a sober analysis of the situation as far as it could be numerically estimated.

To every trained man of useful age—from 20, say, to 35 or 38—which the French Republic could put into the field, the enemy could put into

the field nearly two men, with another two behind them ready for training as the war proceeded. Their superiority in guns was upon the same scale. Russia, they calculated, would put into the field, during these first weeks of war, when France was being defeated, only so many as could be checked without too great an effort upon the Eastern frontier, and held until the destruction of the French army was completed. But, as I have remarked above, the enemy's confidence reposed not only in his numerical superiority, coupled with the peculiar vulnerability of France upon the West, and the peculiar tardiness of Russian concentration upon the East, but also upon certain calculations peculiar to his own theories of war, and what those were will be examined in the next number of this journal.

It will be seen that the enemy's theory of the coming war was not, as an unbalanced and very hasty journalistic judgment in this country conceives, a marvel of preparation, of organisation, and of decision, but what one might expect after

so many years of peace, and what was discoverable in the military opinions of every other service in Europe, a mixture of wisdom and unwisdom, a patchwork of guesses which proved in some things exact; in others muddled; in others, again, merely disastrous errors.

I shall turn to an examination of those theories with the more interest when I resume this analysis next week, from the fact, to which allusion has already been made, that in this country alone among all the Allies there has been conducted, during the last few days, a very vigorous, but quite uninstructed, effort to amaze public opinion by an over-praise of the enemy, and by the representation of his strength as something, both in scale and in quality, different from the strength of those whose approaching task in the West it is to break his backbone and to have done with his influence in Europe.

H. BELLOC.

(To be continued.)

THE WAR BY WATER.

By A. H. POLLEN.

NOTE.—This article has been submitted to the Press Bureau, which does not object to the publication as censored, and takes no responsibility for the correctness of the statements.

THE DARDANELLES.

FROM the Dardanelles we have this week two exceedingly important pieces of news. A German steamer employed as a transport by the Turks has been sunk by an unnamed British submarine, and in the operations of the 3rd and 4th of June the British forces co-operated with the land forces, as on all previous occasions where such co-operation was possible. These two facts are significant as showing that our submarine attack on the Turkish communications is continuously maintained, and that the German submarine attacks on our ships have not in any way whatever interfered with the normal course of our operations.

There are, it seems, only two German steamers of considerable tonnage known to be in the Sea of Marmara or at Constantinople, and as one of these—the *General*—is accounted for, the ship that is lost must be the *Corcovado*, a North German Lloyd boat of 8,000 tons burden. She was apparently plying as a sort of ferry between the Asiatic and the European shores of the Dardanelles. On the Asiatic side the Turks have the benefit of railway communications, and, if the Dardanelles can be ferried, Constantinople is in close touch with the front. But if the ferry is made unsafe, and transports cannot ply direct across the Sea of Marmara, then there is no alternative channel of communication to the long overland route which is entirely without railways, and the roads of which are reputed extraordinarily bad. Moreover, the road leads over the Isthmus of Bulair, where the convoys would be singularly exposed to attacks from the Allies. This being so, so long as we can maintain our submarines in the eastern section of the Dardanelles and in the Sea of Marmara, so long shall we put the enemy forces in the Peninsula of Gallipoli into an exceedingly unenviable position.

The direct military value, therefore, of these submarine enterprises can hardly be exaggerated. But there seems good reason for supposing that the moral value can scarcely be less. It has always been very doubtful if the majority of the inhabitants of Constantinople are in sympathy with Enver Pasha and those who have brought the Ottoman Empire under the heel of Berlin. The appearance of E14 almost at the quays of Constantinople itself is credibly reported to have caused a brief but really serious panic. Several transports have been lost already, and now by far the largest the Turks could command is gone. The moral value of this action is increased by the fact that we have already lost one submarine in the Sea of Marmara in circumstances not yet disclosed to us, if indeed they are officially known, and another in the Dardanelles. Persistence with the submarine campaign in face of these losses may well impress the Turks quite as much as our persistence in using the ships to bombard them in the peninsula, despite the successes of the German U boats.

And, in the meantime, the German U boats have no more successes to their credit. And for this we can probably thank the activity of our scouting craft and the thoroughness with which all possible German submarine bases are being searched out and shelled. Each side, indeed, is faced with peculiar difficulties in this curious underwater war. To get into the Sea of Marmara at all, our submarines have to pass the Narrows and then to travel between twenty and thirty miles of the Dardanelles before they reach hostile and land-locked waters, where no supplies or help can possibly reach them. The bottle-neck, through which they enter the narrow channel that leads to the field of their work, is heavily mined below the surface. It is by this time no new experience for submarines to thread their way through mine-

fields, but except at the Dardanelles, when the passage of the mine-fields is completed, the submarine finds itself in open waters. In darkness, therefore, its progress, except for the risk of collision, is safe. But darkness would only add to the danger of the Dardanelles passage. Moreover, the surface itself is for some miles dominated by an extraordinary array of all sizes of guns, from 14-inch to quick-firers. For a boat to show its conning-tower above water would be to risk detection should searchlights suddenly be thrown on. It would seem, then, that the long, and not too easy, channel of the Dardanelles—for a three to four knots current adds considerably to the dangers of navigation where the seaway is so narrow—would have to be negotiated for the most part by an underwater run. The difficulties, therefore, must be enormous, and constitute a test of nerve and skill of the highest possible order. But once in the Sea of Marmara, it is possible that the British submarine's task will be easier than that of the German submarine when in the neighbourhood of Gallipoli. The total number of destroyers at the disposal of the Turks is not large, and few, if any, of them are really fast. Such as they are, they must probably be kept to guard the battleships. But it must not be supposed that the transports are left to look after themselves. The Turks have plenty of small craft, not so fast or perhaps so well armed as destroyers, but all formidable to the submarine.

The task of the German submarine presents difficulties of quite a different order. They have first to find a secure base, and next, to avoid our destroyers' counter-attack in making any effort against our ships and transports. As I have said, all presumed or possible bases are, no doubt, by this time being mercilessly hunted out and shelled. That is, all bases but Constantinople. And though, if they reach the field of their work, they will find more targets than our boats will find in the Sea of Marmara, those targets will have the benefit of a far more numerous and far more active protection. As things have gone, the honours in numbers of victims are with us, although in the military value of the victims bagged, the honours are with the enemy. It would certainly take many Turkish transports to counterbalance *Triumph* and *Majestic*, old as those gallant ships were. But if we look, not to the direct military value, but to the moral value of the successes gained, it is probable that the advantage is entirely on our side. We have not only heard through Sir Ian Hamilton's report that the sinking of *Triumph* and *Majestic* has not deterred our battleships from joining in the operations, but there have been unofficial reports, both from Athens and elsewhere, that reinforcements have been reaching the Allies continuously during the week.

It is the British public that has not stood the loss of the battleships quite so well. But the British public was hardly in the right mood for so severe a test. For three weeks, at least, it has been subjected to a continuous bombardment of high explosive journalistic pessimism. And, as this bombardment may continue, and as it is certainly possible that more ships—transports, if not war vessels—may be lost, it may not be altogether out of place to state again the simple facts of the situation, even though it be a thrice-told tale.

First, then, we must realise that, while there

exists no means whatever by which ships and fleets can be *absolutely* protected against submarines, a screen of fast craft, moving at high speed, and exercising the keenest possible vigilance, can make operations so dangerous to the submarine itself as *almost* of necessity to drive it away, or keep it so far under water as to be powerless. I say *almost* because the cases of *Triumph* and *Majestic* do show that the vigilance of destroyers can be evaded. But, as these are the only occasions on which this vigilance has been evaded, it seems unreasonable to suppose that such a success can be often repeated.

If submarines cannot be driven from the neighbourhood of ships by destroyers or fast craft, the ship has no defence except to make itself a difficult target by moving quickly and on a changing course—measures which also reduce the chances of submarines getting within striking distance. But even speed is far from being an absolute protection, although, except in the case of the *Lusitania*, which was nearly 800 feet long, there is, I believe, no known case of any ship faster than fifteen knots being hit. At the Dardanelles, bombarding ships and transports engaged in disembarking troops would have to rely for protection upon the vigilance and activity of destroyers, because the character of their duties would make it necessary to remain absolutely or nearly stationary.

THE ALLIED FLEETS.

In the Baltic there seems to have been a lively exchange of submarine amenities. The Russians have lost a transport, the Germans three war vessels. From the Adriatic there is much more news, and the strategic importance of it is manifest. The cross-ravages of the aircraft can be ignored, first because experience shows us now that the permanent military damage which aircraft may inflict is small, but mainly because neither side is ever likely to tell us the truth as to the damage actually done. One wishes one could believe the Roman report that the dirigible's attack on Pola not only caused a considerable fire in the naphtha stores, but drove the ships out of harbour in some sort of panic, so that a battleship rammed and sank a destroyer. In the kind of fighting that is likely to take place in the Adriatic a loss of destroyers by the Austrians would be serious indeed. But it is wiser to keep our speculations for the more reserved statements of the official bulletins.

From these it appears that at least two squadrons of the Italian fleet and one squadron of destroyers have been busily at work since the beginning of the month. Three separate bombardments of Monfalcone—an important minor dockyard and destroyer base—have been carried out by destroyer flotillas, one on the 1st and the other on the 5th of June. The newer Italian destroyers, be it noted, carry even heavier guns than ours—4.7, instead of 4 inch. And on the second occasion a squadron of larger ships were in attendance. Monfalcone is surrounded by shallow water and no deep-draught ships can get within range. The work, therefore, had to be left to the destroyers only, and it is to be supposed that after the first bombardment the Italians fully expected the Austrians to attempt to cut off the flotilla when it withdrew. But no such attempt was made.

Meanwhile another fleet has been operating in the Dalmatian Archipelago, destroying light-houses, wireless stations, and observation points, on Lissa, Curzola, and other islands, and cutting the telegraph cables between all the islands and the mainland. More than this, the coast railway between Ragusa and Cattaro has been shelled and is reported to have been destroyed. As this railway is apparently the only military line of communication by which troops and supplies can be sent to Cattaro other than by sea, the importance of destroying the railway, if it is really destroyed, would be considerable. But railways are proverbially almost as easy to repair as they are to destroy. The significance of these operations is not to be measured by the actual damage they have done, as if such damage were a kind of final asset, but rather by the fact that they illustrate Italy's assertion of the command of the Adriatic. And what she can do once she can do again. For here, as at Monfalcone, the Austrian fleet has not ventured on any counter-attack.

The Austrian fleet has to solve much the same problem as faces the Germans in the North Sea and the Russians in the Baltic. What is the function of an inferior fleet? An army in inferior numbers can fight successfully on the defensive for a very considerable time, but the rôle of an inferior fleet is still to seek. In this war, at any rate, it is seemingly without a mission. The Adriatic situation, however, is not quite so simple as it seems. The Austrians, we must suppose, will not of set purpose seek a general action. The odds are too much against them for that. But, unlike the Germans in the North Sea, they may be compelled to action.

The probability of a fleet action, then, turns primarily upon the land campaign, and the character of this, in turn, may to a great extent be determined by the action of the Italian fleet. Always assuming that Russia and the Western Allies can keep the Austro-German forces sufficiently occupied, so that the Italians will be able to invade Istria, it is well within the region of possibilities that the first fleet action of the war would take place in the Adriatic.

All we can say for the moment, however, is that, far from following up their raid on Ancona, the Austrians have now retreated to their ports, and the Italian fleet holds undisputed command of these waters. It is a command that Austria may dispute at any moment. But I submit that she is unlikely to do so until compelled.

THE COURAGE OF MR. CHURCHILL.

Mr. Churchill's speech at Dundee is really almost a naval event of importance. Its value lies in this: To the great scandal of the Empire, to the confusion of ourselves and the amazement of our Allies, we have had to reconstruct our Government in the middle of a war, and primarily owing to disagreements on the chief command of the Navy. Upon Mr. Churchill has fallen the humiliation of relinquishing the post of First Lord just when the British Fleet was discharging the main purpose of its being—namely, the complete command of the sea, with a thoroughness unparalleled in history. The assertion of supremacy was made on the first day of the war, and all our subsequent military operations have been made possible by it. Mr. Churchill has been the leader through all this time, and is surely entitled to some of the credit

of so overwhelming a success. The minor set-backs in the first five months of war hardly affected that success at all. It is the unsuccess of the expedition in the Dardanelles and the disagreement with Lord Fisher that have brought him down.

In speaking at Dundee, therefore, he came before his constituents in the character of a beaten man, and he spoke at a crisis when the country has been more depressed in spirit than perhaps at any time since last August. A man who at such a moment as that can deliver the best of his fighting speeches, indeed the best fighting speech that we have had in ten months, is something more than able, clever, or brilliant. Throughout this crisis Mr. Churchill has shown the loftiest sort of moral bravery.

The time has not yet come to estimate the value of Mr. Churchill's work as First Lord, but in justice to him two things should be borne in mind. Not for one moment since war became either imminent, or an accomplished fact, has he been otherwise than a fearless and intrepid leader. The qualities he stipulates in our chiefs, "courage, energy, audacity, the readiness to take all risks and shoulder all responsibilities," he exemplifies splendidly in his own person. He may not always have been wise, but he never was afraid. And the Navy loves him because its heart goes out more to courage than to any other quality.

Mr. Churchill became First Lord at a moment of transition. The British Navy had just been reconstructed by Lord Fisher. The monster ship, long-range gun-fire, the long-range torpedo, the high speed capital ship, the submarine, the aeroplane, all were novelties of the last ten years. Each novelty had its enthusiasts, each trying to push the qualities of size and power and speed to their utmost limits. And the enthusiasts defeated the experts. They had a simpler game to play. All they had to do was to ask for more—speed, size, range, &c. Thus, between 1907 and 1914 we pass from the last mark of the 12-inch gun, through two stages of the 13.5, and reach the 15-inch. Between 1908 and 1914 the speed, range, and power of torpedoes, and the size and radius of submarines was doubled and almost trebled. But no recognition was given to the fact that, as guns increase in power and range, and as ships grow in speed and mobility, there must be developed a technique of gunnery so that the new weapons can be adapted to the new conditions. And no systematic official effort was made to work out how the existence of these fast long-radiused submarines would affect the grave problem of the defence of fleets, or how the long-range torpedo would mould the tactics of fleet action. As for the problems involved in bombarding shore positions, they were ignored altogether. Method was forgotten in the general devotion to mass. Those limits could only be ascertained by patient investigation and experiment. In the rush for size—that could be advertised—there was no time for the dull and disillusioning processes of thought. Thus it was Mr. Churchill's misfortune never to have the eternal truth brought home to him that the Navy is an instrument that *can only be used rightly if used within the limits of its mastery over the weapons that it employs*. The expert who asked how all these fine big things were to be used struck a note of doubt; the enthusiast struck the note of sanguine confidence.

A. H. POLLEN.

MACHINES AND MEN.

By JOHN BUCHAN.

I HAVE been asked by the Editor to set down my impressions of the character of the present stage of the War in the West. Let it be understood that they are my own personal impressions. They have no kind of official sanction, and I do not know whether any soldier of authority agrees with them. But they are first-hand, and I give them for what they are worth.

Every war is a contest of two factors—men plus machines. The one without the other is valueless. An unarmed soldier and an unmanned gun are things of equal futility. As matters stand at present the Germans are our superiors in one thing only. They have the better and stronger machine, and they use it to keep our man-power at arm's length. We believe, and we have cause to believe, that the quality of our fighting manhood is, on the whole, better than theirs. They seem to realise this, for they are striving to make it a long-range war. Our business is to devise as quickly as possible a counter-machine of at least equal strength which will give us a chance of "in-fighting." On that depends our success, for it is close-quarter fighting that alone will give us the complete victory, which is the only kind that can be contemplated. The German machine is so good that it is unlikely that we shall be able to better it; at the most we can create something equally strong. But our fighting stuff is so good that even in the most desperate war *à outrance* when the Germans were fighting in direct defence of their homes, I do not think they could equal it. There lies our hope of superiority. Our business is to find some way of giving our manhood its chance.

QUALITY v. QUANTITY.

To put it in another way, we are equal or superior in quality, but inferior in quantity. Our guns and our gunnery are as good as the German, our field guns better. Perhaps they are more skilful in the tactical use of machine guns, for they have made a speciality of them and have five to our one. But in air work, in intelligence, in leading, we are certainly their superiors. We are clearly superior, too, in the quality of our Armies. I do not mean that there are not thousands of German soldiers as brave, as well-trained, and as well-disciplined as any in our own ranks. But their armies are no longer homogeneous. The terrible gaps have been filled up with very raw material which has not been absorbed and cannot be absorbed. You have only to talk to a German prisoner of the first line to learn the quality of many of the new drafts. The most notable fact, on the other hand, about our present front is its high quality all round. The famous old regiments that have been in the field since Mons are now largely made up from reserves, but it would be rash to say that the Guards Brigade, for example, is less good now than it was on the Aisne. The Territorials and Yeomanry have been lately fighting alongside our best infantry and cavalry, and doing marvels. The New Army, to anyone who has watched its growth, is not less efficient. The result is that our new troops do not make an ugly patchwork, but seem part of the old pattern, and the same is

true of the French. Again, as to officers, we are better supplied with the right kind. The mortality in the German officer class has been terrible, and since that class is a caste the losses are hard to replace without a violent breach of the whole service tradition. We are far better off in this respect than most people at home realise. There is a type of man in England whom the Germans overlooked in their calculations—the man who spends a few years in the Army and then leaves it to take the hounds somewhere or travel abroad. Nearly all that class is available now. Besides, in a peculiar degree the war in its present phase is a subalterns' war. Young men with half a year's service are as efficient for trench warfare as veterans of several wars. They have all the knowledge that is relevant, and are young and keen and cheerful to boot. One hears people complain that boys fresh from Sandhurst or Oxford are being "sacrificed." But they are not sacrificed, for, if they only learn a little caution, they are precisely the men wanted for the work. I have in mind a famous battalion which won great glory at the first Battle of Ypres and in many recent actions. After the colonel the next senior officer has eighteen months' commissioned service, and none of the others more than a year. Yet the battalion is in as good fighting trim as in October.

THE NEED OF QUANTITY.

These reflections make for optimism. But the time for optimism will not arrive till we have got our quantity to a level with our quality. There is a long road to be travelled before we can make certain of a decisive victory. Our quantity needs to be increased, largely increased, under two heads—men and mechanism.

1. *Men*.—Probably at this moment the Allies outnumber their opponents on the Western front. To estimate the British number might give information to the Germans, who, I understand, are sedulous students of LAND AND WATER and Mr. Belloc's articles. But it may safely be said that for the thirty miles of line which we are holding our numbers are ample. Why, then, the need of more men? For two reasons, one particular and one general. The French Army since August has been undergoing a strain which only those who have seen these splendid troops at close quarters can realise. British officers have had leave; the French have had little or none. The whole of France has been stretched taut in one mighty effort. Now it seems pretty certain that we must look forward to a second winter of trench warfare—I hope on a different and much more easterly line of trenches. If that happens it is imperative that the British should hold an adequate share of the front. We have a greater population than France, but we are at present holding less than a tenth of the line. No doubt it is a very critical part, and we have had some of the hardest fighting of the war.

In the second place, it is men—the human factor—by which a campaign is ultimately won. A machine does the preparation, but the soldier completes the job. Our business is to get a

machine which will nullify the enemy's, and then use the weight and quality of our man-power. Since we are not fighting for an equivocal peace but for the unconditional surrender of Germany, we must have the men to launch on her when we have shattered her defences. Exaggerated notions about the value of sea-power have tended to obscure in the minds of many people what such a decision as we are aiming at really involves. We are not fighting for insular security but for victory, and therefore it is not enough to sweep German merchantmen from the seas or even to destroy her Navy. Germany will not be beaten by shortage of food or shortage of munitions, but by shortage of men, and her decisive crushing can only take place by land. We must shatter her power in her own element; otherwise the war is as indecisive as the traditional combat of wolf and shark.

2. *The Machine*.—Here we have a long leeway to make up in certain breaches. There is, first of all, machine guns. The Germans are believed to have at least twelve to a battalion; our maximum is four, and that is not often reached. In all the trench fighting machine guns are highly important, as important as the bombs and grenades which we have learned to use most skillfully. The German line when it is attacked tends to "bunch" and collect into fortresses which bristle with machine guns, and the effect of this equipment is as if their troops were armed with a wonderful new automatic rifle.

Another deadly part of their machine is their poisoned gas. I am inclined to think that we are on the way to get even with this devilry without using a counter-poison. Our latest type of respirator is very good, and it was found in the fight at Ypres on May 24 that those troops who had been practised in their use till they were handy with them got off wonderfully lightly. Most people would prefer that we should not use a similar weapon in reply. We can probably devise a gas as deadly and as practicable as the German chlorine.

Most important of all is the supply of high explosive shells. It is useless to indulge in recriminations on this subject. Probably it will be found that none of the experts till quite recently were quite clear on the matter, and if experts speak with a divided voice the administrator at home is helpless. But to-day there is no question about the need. A German artillery or gas attack can only be met by a counter-bombardment. At the second battle of Ypres, which began on April 22, our line was maintained against impossible odds and with very great expenditure of life. Again, infantry cannot advance against trenches and entanglements, as the enemy constructs them to-day, unless an artillery preparation has broken them down. The French movement the other day towards Lens succeeded, because for four miles they had sterilised and flattened out the ground with their gunfire. The sight of that tremendous performance—great guns firing all day with the rapidity of maxims—was a lesson in the practical business of war. For miles there was nothing left of hostile parapets and entanglements—only a ploughed countryside, and fragments of wire and humanity. After it the infantry could advance as safely as on parade.

It is useless to labour this point, for we are all agreed. The melancholy reflection is that we

have not yet got the adequate machine, and until we get it we fight at a disadvantage. The bright spot is that once we have got it we have a clear superiority. Germany has trusted too much to her machine. Under cover of it her soldiers have dealt out death at long range, and they are so familiarised with this method of fighting that it may be doubted if they will do well at close range. Certainly in the last month their infantry attacks have been fiascos. Von Mackensen's thrust on the San, so far as we can judge, has been chiefly an affair of artillery. Counter their artillery with an equal or stronger weapon and the Allies are free to get to grips with them. I do not think there is a single case where, when we got to close quarters, we have not succeeded.

THE STRATEGIC PURPOSE.

There are three ways in which an enemy can be defeated. You may outflank him, roll in his wings, and compel a wholesale surrender. Or you may wear him down in a series of small actions where his losses are on the average much higher than yours, till a point is reached where his resistance crumples from sheer lack of numbers. Or, finally, you can make in his line a rent wide enough for your wedge to move in, roll up the ragged ends, and break his cohesion.

The first plan is impossible in the West, where the flanks of the armies rest on the Alps and the sea. The old manoeuvre-battle is hopeless, since you cannot alter the configuration of Europe. The second is the plan the Allies have pursued during the winter. A war of attrition is successful when the enemy's normal rate of wastage is greater than yours, and this has been, generally speaking, the case whichever side initiated the attack. But attrition is a slow business, and a decision reached by exhaustion is not as valuable for our purpose as a series of crushing defeats in the field. For one thing, it costs the victor too much. Besides, if Germany is beaten by a slow wastage she may still trust in her military machine and believe that later, under more favourable conditions, it may succeed. But if the very gods in which she has confided play her false she may turn to more wholesome deities.

The third plan—to tear a great rent in her line—is the most hopeful. If that rent is wide and deep enough we may succeed in cutting the communications of a large section of her front, and so forcing her to shorten it and take up a new line. The same manoeuvre repeated may drive her back inside her own borders, and give us the first stage towards victory—a campaign within German territory. But to make the rent needs a machine the equal of her own—more guns, far greater reserves of ammunition, and a great weight of men. We can provide all these things if we choose, and so the issue is in our own hands.

One last word. Germany is formidable not because she is more wicked and unscrupulous than ourselves. Her vices and follies are in the long run hindrances to her, not assets. She is formidable because of her virtues—her patience and science and foresight, the astonishing unanimity and discipline of her people, the endurance and self-sacrifice of her armies. We can win only, by showing superior virtues, and that is an encouraging reflection for honest men. The Devil has not yet got his own way with the world.

SONGS OF THE ENEMY.

By DESMOND MacCARTHY.

THE two little books I am about to review were given me by a wounded Prussian soldier. They fell into my hands in this way: One misty morning the French launched a small attack in the direction of Bixschoote. It had been a very brief affair, easily successful, and costing them little. When our ambulances arrived on the scene it was all over. A few prisoners were being conducted across the fields, not more than eight or nine altogether. They came along stolidly enough, great grey louts, looking very big and thick beside the French soldiers on each side of them. The moment they got into the village street—or, rather, the ruins which remained of it—we swarmed about them, jostling to have a look and to examine the things which had been taken from their pockets, letters, paper-money, tobacco, &c. They appeared—there is no other word which describes their demeanour—uncommonly shy. One or two were grinning in an apprehensive, propitiatory way, others stood sullen and absent-minded.

The scene reminded me of the sudden discovery of a batch of new boys in a school-yard at the beginning of term-time. Questions were shied at them, which provoked laughter, but, of course, no answers, and there was the same sort of mischievous enjoyment among us of the fact that the new-comers did not know how to behave or what might not be going to happen to them next. Presently the ring broke to make way for an officer, who took the papers and asked if anyone could speak German. I said I thought I could manage to make them understand, and began to act as interpreter for the usual questions. What regiments did they belong to? How long had they been there? How many of them had there been? Had they suffered much in their feet? (The French had suffered themselves a great deal from inflammation and frost-bite owing to standing long in watery trenches.) To this last question they replied, "No," which made us look with envy at their boots, which, sure enough, were heavily soled and came high up the leg.

After this interrogatory was over they were marched away to a cottage with four walls intact, on the doorstep of which two French soldiers sat down with their rifles across their knees and began rolling cigarettes. "Now M. le Majeur," said the officer, "come and see what's the matter with this beggar over here. The surgeon is down at the other post." I explained that I was not a doctor. "Well, you can talk to him. He makes out he cannot move." We went together into a cottage kitchen, where, in the semi-obscurity an enormous German was lying on the floor. He had a short scrubby beard and small black eyes which caught the light from the window. I knelt down beside him. "Wie geht's?" "Schlecht." Yet he gave an impression of great health and strength and an immense indifferent indolence, sprawling there on his back. Was he in pain? No. Where had he been hit? He didn't quite know. He said he was very cold and couldn't feel his legs. We slowly turned him on his side with some difficulty, to see if he had been hit in the spine. His back was so caked with mud it was hard to discover whether or not there was a hole in his coat. But since we could do nothing it was better not to disturb him further, so we propped him up and he settled himself stiffly.

Rising from my knees I saw that a few yards from his feet the door into a side room was open and that the head and shoulders of another German were visible. This man's mouth was open and his temple was smashed in. His face was yellow, and he had been dead some time. I got up and pulled the door to. The officer nodded. *Oui, ça n'est pas beau,* and he went out, while I sat down by the prisoner to wait till the ambulance should come back to pick us up. Enemy or not, one feels a respect for a seriously wounded man which makes one embarrassed and often at a loss to know what to say. I thought this man was done for, though he looked placid and robust. It is easiest to ask questions.

"What is your name?"

He told me, but his speech was thick and I could not catch it. I did not ask again.

"Married?"

"No."

"What are you?"

"*Arbeiter*—in a factory."

"Where do you live?"

"East Prussia."

"How long have you been at the war?"

"Four months."

"Had a hard time? Have you been in many battles?"

"Ach, ja." He spoke as though it was wearisome to look back on such things.

"What are they going to do with me?" he said, after a pause.

"Take you to a hospital and put you to bed."

He made a feeble movement with his hand towards the door I had shut. A French soldier came in with a tin mug of hot coffee, which seemed a sufficient answer to his suspicions. After he had drunk it, I asked him if he would like to write a letter. If he gave me an address and told me what he wanted to say, I might be able to get it through, but I had no paper. He pointed to a pocket, and in it I found a torn note book and two other thin books bound in blue canvas. I had some difficulty in understanding the address. He sent his greetings to his mother and said he was wounded and a prisoner. Seeing me turning over the pages of one of the little books, he said I could keep them.

One was a manual of prayers for men at the front and the other a "War Song Book." The most noticeable feature of the prayer-book is its systematic provision for every sort of occasion. There is a prayer for recruits, a prayer for setting out on the march, another for going into action, one of thanksgiving for victory, another to be read after a defeat. There are prayers asking for courage and patience, also for the Christian churches, for the Fatherland and one for "our dear rulers and the Imperial house." It is a dignified little manual, written in the sterling old Biblical German which shows the language to advantage, and it has evidently been compiled by men who regard war in a solemn, self-dedicatory spirit. The song-book was a good deal more thumbed, and if the first book, read in the light of the Report on the atrocities, produces a strange confusion in one's mind, this book, too, stirs unexpected reflections.

In the first place they are sterling patriotic songs, though not good poetry—indeed, most of them are far from it. But the words of a song need not be poetry; they need only be the stuff out of which poetry is made; then the music comes and turns them into poetry. Such are these songs. What is startling is that the emotion they express is not the menacing, aggressive patriotism which would consort with their actions, but the kind which is equivalent to love of home. It is odd to find that even "*Deutschland über alles*," the first phrase of which seems so exactly appropriate to the spirit of modern Germany, is, after all, only an appeal (written in 1841) to Germans to put the common traditions of the race before local patriotism, and not to be divided by their rivers and princes.

The essence of patriotism is the love of an ideal which a man feels inherent in the civilisation, the places and traditions, out of which he drew his life. No literary skill in adjectives is necessary to express this quality in things. For the Englishman, Frenchman, German, the word English, French, German will serve best to express that particular uniqueness in them which mysteriously satisfies. Where the skill of the writer comes in is in simply mentioning the things in which this uniqueness is most constantly felt, and in these songs this is done well. The Germans have come trampling and ravaging into other people's countries, intensifying every brutality possible in war, yet heartening themselves all the time with songs about their own pine-woods and water-mills, the peace of their homes, their sweethearts, their wives, their wine, their good-fellowship, their friendships, and, above all, their longing to be free and united. And, stronger contrast, still, the fighting songs of these inventors of gases, bombardiers of seaside pleasure places, skuttlers of ships, are full of the spirit of a romantic chivalry.

One feels after reading them there was never a more foolish thing said than: "Let who will govern them, if I may write the songs of a people."

BOMBS USED BY AIRCRAFT.—II.

By L. BLIN DESBLEDS.

EXplosive bombs are very rarely the direct cause of a fire, but where a building is injured or collapses, as a result of an explosion, a conflagration is often started by open lights or fires inside the building, and is assisted by escaping gas from broken mains or by arcs from broken electric wires.

The incendiary bomb, on the other hand, is designed with a view readily to set fire to buildings and their contents. A number of such bombs were dropped from the hostile aircraft which recently visited Southend, Deal, and Ramsgate. Some of these bombs were carefully examined by the British Fire Prevention Committee, which has prepared several leaflets giving valuable advice to the public as to the manner in which fires caused by incendiary bombs could be stopped or circumscribed.

Description of a German Incendiary Bomb.

The incendiary bomb, used by the Germans, has the general external appearance shown in the sketch (Fig. 1). It is conical in shape, and is of about 10in. in diameter at the base. A rope, which has been saturated with some inflammable substance, is coiled round its outside, and binds together the various parts of the bomb.

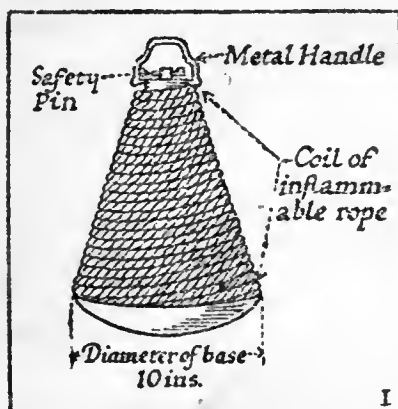


Fig. 1.

SKETCH OF A GERMAN INCENDIARY AERIAL BOMB.

sheet metal, there is fitted a funnel, also of sheet metal, conical in shape and pierced with a number of holes. At the top of this funnel are fixed the handle and the mechanism for igniting the bomb.

The funnel is generally filled with Thermit, which upon ignition generates intense heat, and by the time of the concussion has taken the form of molten metal of the extra-

There is at the apex of the bomb a strong wire handle by which it is held over the nacelle of the aircraft before being dropped. So as to prevent any premature operation of the bomb, a safety-pin is inserted in the ignition mechanism, and is only removed at the moment when the bomb is to be used.

The base of the bomb is sometimes flat and sometimes cup-shaped as shown in the sketch (see Fig. 2). On that base, which is of

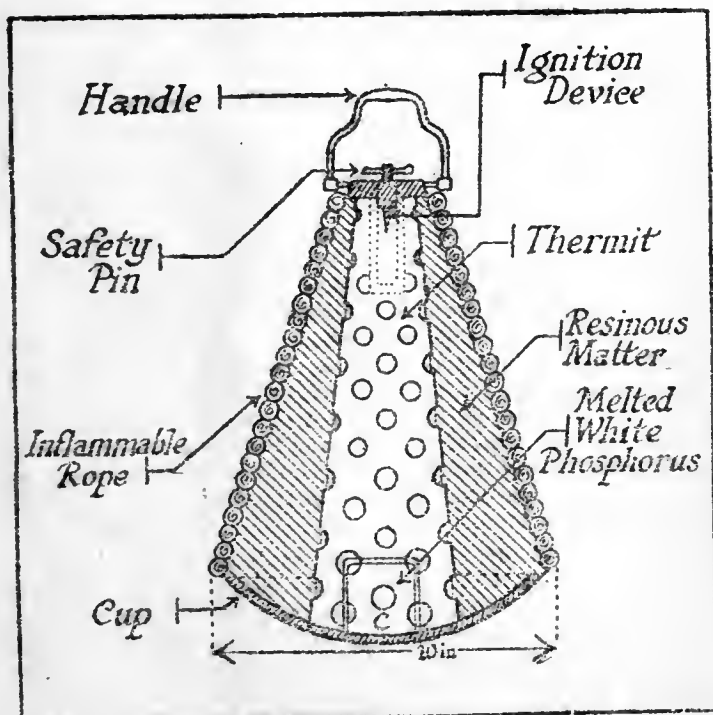


Fig. 2.

SECTIONAL SKETCH OF AN INCENDIARY BOMB.

ordinarily high temperature of over 5,000deg. Fahr. The molten metal is spread by the concussion, and its temperature enables it to cut its way through a sheet of metal one-quarter of an inch thick. Outside the funnel is a padding of a highly inflammable or resinous material, which is bound on by the inflammable rope already mentioned. The resinous material creates a pungent smoke. There is generally some melted white phosphorus in the bottom of the bomb which develops nauseous fumes. In some cases celluloid chippings are added and occasionally a small quantity of petrol.

The "Guerre" Incendiary Arrow.

The Allies also have a number of incendiary bombs. It is, of course, impossible to explain in an article meant for publication the devices which we or our Allies may possess. There is, however, a French incendiary bomb about which so many articles have already been written that the Censor cannot object to a short description of it being made in this publication.

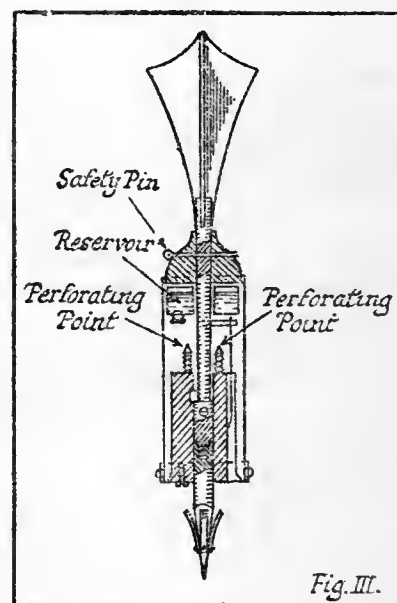


Fig. 3.

SECTIONAL SKETCH OF THE "GUERRE" INCENDIARY ARROW.

The "Guerre" incendiary arrow, a sectional sketch of which is shown in Fig. 3, derives its name from that of its inventor, M. Guerre. It weighs only 2½lb., and is about 16in. in length and 3in. in diameter.

It consists essentially of two parts, one of which carries a reservoir containing petrol, or any other inflammable substance, and the other slides relatively to the first one. Besides means for perforating the reservoir, this latter part contains a device for igniting the inflammable material.

The shock produces the sliding of the two parts relatively to each other, which produces an incendiary result.

M. Guerre's incendiary arrow has already proved very successful.

The British Fire Prevention Committee's Suggestions.

To cope with the possible danger arising from incendiary bombs, the above Committee has suggested some precautions to be taken wherever there may be a likelihood of an aerial bombardment. A knowledge of these precautions, as well as the method suggested by the Committee to deal with the effect of incendiary bombs, may prove so useful that the writer has summarised them below:

1. Should definite information be received of the approach of hostile aircraft, or actual bombardment commence in the vicinity, refuge should be promptly taken in the cellar, basement, or lower floor.
2. All gas lights or stoves should be turned out, and the gas supply turned off at the meter.
3. All electric lights should be switched off, and the supply turned off at the main switch near the meter.
4. All oil lamps should be extinguished and taken into the cellar or basement, and all open fires above basement level should be put out.
5. All doors, windows, and shutters should be closed.
6. Buckets of water are the most suitable and the most economical fire appliances. When oil or spirit is kept on the premises buckets of sand may prove of great value.
7. Don't wait until a fire occurs to find out how it is possible to get out in the dark. Think of a couple of ways out beforehand.
8. If there is dense smoke from a fire, remember that the air is clearer near the ground, so crawl on the floor, with a handkerchief, wet rag, or respirator in front of your mouth.

9. Ascertain the quickest means of obtaining assistance from the Fire Brigade and Police. Post up the necessary particulars, nearest fire-alarm, &c., on the ground floor.

10. Don't run or shout. Keep calm.

Fires caused by incendiary bombs may be prevented from spreading, regardless of the high temperature generated at the actual seat of the outbreak, if water be promptly applied in fair bulk, force, and continuity.

The Bragg-Smith Anti-Submarine Aerial Bomb.

It is very rightly questioned whether a moving aircraft is capable of dropping a bomb straight on to a moving submarine. Besides, it is very likely that a submarine, when seen from an aircraft, would be moving a few feet below the surface of the water; so that an ordinary aerial bomb, even if it fell over the submarine, would, on striking the water, immediately explode, while the submarine itself would remain uninjured, and be free to continue its career.

An anti-submarine air bomb must, therefore, be designed to damage the submarine, whether it actually strikes the submarine or not, provided it falls within 20 or 30 yards of the submarine, and it must not explode on impact with the water.

Such anti-submarine air bombs have now been designed. There is, for instance, the Bragg-Smith air bomb that will not explode until it has penetrated into the water to a predetermined depth. Such a bomb, *by its explosion under the water*, would destroy or would capsize a submarine, whether it actually struck the submarine or fell some 30 yards from it.

WE reprint from the *Tribune de Genève* the following letter written by Professor de Wilde apropos of a recent article by Mr. Desbleds in *LAND AND WATER*:

I have read with keen interest an article in your paper by Mr. Blin Desbleds on "a scheme to revolutionise warfare."

I venture to point out that the 2,140 trains which, according to the author of the scheme, must every day cross the fifteen principal bridges over the Rhine in order to re-victual the German army operating in Belgium and the North and North-East of France, must also pass over the bridges of the river Meuse at the following points: Visé, Liège, Huy, Namur, Anseremme near Dinant, Charleville, and Sedan, which makes only seven bridges instead of fifteen.

All these bridges are in the hands of the Germans. Those at Huy and Anseremme cannot be of much use as they only serve to connect small railways consisting of but a single line. If the traffic on the other five bridges were stopped the German army, at the end of a few days, would be without food and without munitions.

The great railroad from Cologne to Paris, via Aix-la-Chapelle, Liège, Namur, Charleroi, Maubeuge, runs through the valley of the Vesdre between Verviers and Liège, and through the Valley of the Sambre, between Namur and Maubeuge. In these two valleys there are at least thirty bridges whose destruction would be fatal to the Germans.

Also, if the aeroplanes were to start from Donlens or from Amiens (Departement de la Somme) the length of the flight would be reduced by half.

In modifying Mr. Blin Desbled's scheme in the manner I have just indicated it would be rendered much easier of execution and much more economical, while, at the same time, its full efficacy would be preserved.

P. DE WILDE,

Honorary Professor of the University of Brussels.

THE VALUE OF THE INITIATIVE.

By COLONEL F. N. MAUDE, C.B.

THE principal cause of the confusion which exists in many minds as to the relative strength or weakness of the military situation arises from the loose and inaccurate way in which technical terms are being used by those never trained to appreciate the exact sense in which they are employed by experts. The experts themselves are also a good deal to blame in the matter, because out of sheer intellectual slothfulness they have continued to employ words which, owing to the rapid change in conditions, no longer give a correct picture of the phenomena they are intended to describe and ignore entirely that these meanings also vary with the rank and position of the men who use them.

Writing from the strategist's point of view, it is technically correct to speak of the Allies in France as the attacking party, and the men in the trenches are equally correct in considering themselves essentially as defenders, though by their defensive action they are in reality furthering the cause of the offensive just as materially when repulsing German counter-attacks as when storming the opposing trenches with the bayonet.

If strategists had thought out their subjects with greater precision, I think they would long since have limited the use of the word "attack" in their field of action, and substituted the word "initiative" to cover all cases where in fact one side exercises by free choice the power of compelling his enemy to assail him. I am dwelling on this point because it seems to me that the main cause of the wave of pessimism that is passing over us is due to the fact that the public neither understands or believes how thoroughly the Allies now possess this power of "initiative" or how, though the Germans persistently attack us locally, we have in fact thrown them on the defensive, and their only form of defence is the local counter-attack, which they are compelled to deliver in the hope of holding us at arm's length for as long as possible.

We have obtained this initiative not only because our resources in men and material are greater than those opposed to us, but because our leaders have the will and the skill to use them to better advantage. At first, after the closing of the gap at Ypres, we were thrown purely on the defensive—that is to say, that we had to await passively the delivery of the enemy's attacks at points of his own choice, for at the moment he was still superior in available resources. But presently, as our aircraft and the French artillery established their supremacy, a gradual progress was apparent, beginning in November, and continuing on unto the present time; and we—i.e., the Allies—by degrees asserted our power of attack against certain well chosen points in the enemy's line which he had to hold at all costs.

Soissons, Perthes, Les Eparges, the Vosges, to cite only a few examples. To defend these the enemy was compelled to rush his reserves about by rail, concentrating and attacking first one point and then another, and always sacrificing men in the ratio of from 3 to 1 to 4 to 1, thus gradually bleeding himself to death.

Then, when to end this annoyance once and for all, the Germans brought up the great reinforcements they had been preparing throughout the winter, we, hearing of their concentrations, primarily thanks to our aircraft, began a series of attacks at Neuve Chapelle, Hill 60, Arras, &c., which compelled him to disseminate his forces instead of assailing us with a great concentrated effort.

Except through the use of poisonous gases, he has gained nothing at all by this vast expenditure of energy, and, though we know, with a fair approach to accuracy, the numbers of his army corps which have been shaken and demoralised by their repeated failures, it is not yet certain whether more remain behind or not.

If his furious attacks now cease, the conclusion that there are no longer fresh reserves to be drawn upon follows, and if there is any doubt on the matter, a further application of pressure in any one of the many sectors open to us should settle the point beyond dispute.

This is the main line of thought which must be held fast in spite of all distractions, for distractions, of course, there must always be as long as one is dealing with human factors. Great masses of stores, artillery, and troops cannot be moved by enchantment, but time and all the vicissitudes of active service have to be taken into account, and it would represent an inconceivable degree of perfection if, in the execution of such movements, troops were not subjected locally to very high strains, being, in fact, called upon to purchase with their lives the time needed to overcome the internal friction of the whole machinery involved, which stretches back, say, from the gun at the front, through countless factories and workmen's hands, till we reach the crude ore or other raw material from which the finished article—shell, boots, &c.—is made.

Such moments of exceptional strain on the men have been frequent lately, and one can well understand the depressing effect of heavy casualty lists on their friends and relations; but the mere fact of these great efforts of endurance being demanded is proof positive that the superior command understands and appreciates the value of the material he employs, and is exercising a wise economy in its expenditure, so as to keep in his hands the most crushing superiority possible when the time comes for the knock-out blow.

TALES OF THE UNTAMED.

MARGOT (continued).

Adapted from the French by Douglas English.

IT lifted on a treacherous wire, and loosed from either side a whip of steel, which cut into her neck. So fierce, so sudden was the grip that she dropped limp with sprawling limbs. She woke to find herself fast held, to hear the crunch of human tread, to see a monstrous two-legged thing loom up in ominous black.

And Instinct whispered counsel.

She felt that she was trapped, that she must somehow free herself before the monster reached her. She arched her body like a bow, and, with firm-planted claws and lashing wings, pulled back with frenzied strength against the grip. Her beak, her head, her tautened neck were as one cord which stretched to breaking-point. The trap's jaws eased—her ears slipped past the catch of them. Another maddened pull, a scrape which rasped six feathers from their roots, and she was free.

Ten seconds more and she had met her fate. The Man came running as she writhed, and flung himself to grip her. She slipped like oil between his fumbling fingers, and winged her screaming flight aloft to cross the ridge on which the snow lay thawing. His fat bewildered face, upturned, stared after her until she passed the skyline. She had escaped once more from Man, and mastered one more lesson.

The hoar-frost danced and twinkled on the trees; the plough was one vast iris-tinted brilliant, whose myriad facets caught the sun's white flame, and mirrored it in pink, and gold, and azure. No snare, no enemy was in sight. One sound, and one sound only, broke the stillness—the cry of magpie in distress, and Margot and her sisters sped towards it.

Did some faint memory of the pool still haunt them? There was no water here, no tree; a waste of snow-clad earth, a waste of sky, save where a grey smoke spiral told of the cottage hidden by the rise.

But there was something which brought back the pool—a sister voicing her distress, and that distress a riddle.

She lay upon a wooden board, breast upwards. Her feet clawed at the empty air. She wailed and screamed incessantly.

From every side, from forest, wood, and copse, flocked mags in twos and threes to stare at her.

The bird was crucified. Two staples driven through her fleshy wing-bones racked her with pain unspeakable. But she felt torture worse than this—the inversion of her world. With feet and belly uppermost, it was as though the heavens had capsized. Her dizzied brain reeled to and fro, her head beat dully, sideways on the wood, as, with one rounded terror-stricken eye, she searched the abyss that hung above her head, and saw the plumage of her sisters' breasts above her.

They screamed and wheeled and screamed again, and, one by one, approached in lowering spirals, and so dropped to earth. They circled round her, tripping, strutting, prancing, with pointing beaks, with necks outstretched. Their orbits narrowed gradually. Margot was boldest of them all. She danced across the prisoner, whose claws, now clenched, now wide outspread, sought point for thrust, or grapple.

Her sisters, too, drew near. Not one of them could understand.

There was a babel rout of birds, a jostling, cackling horde of them, wing-flapping, sideways leaping, with eyes and tongues adrift in wonderment.

And, suddenly; a tragedy.

Margot had skimmed, for once, too near. The groping claws entangled her. Like drowning hands they fastened on her neck, and her screams joined the captive's screams, and both were hardened to short, gasping sobs, to stifled, gurgling discords, which, for an instant, struck the audience mute.

An eerie duel this.

The prisoner's claws gripped, strangling, and Margot tugged against them, wings awhirr. Her feet, which rage had steeled, slipped sideways on the ice-glazed board. She fell, recovered, slipped again, and lunging fiercely with her hampered beak, sought to pierce heart or eye. She brought her claws to bear at last, and drove into her rival's quivering body, and tugged, the while, against the grip. In vain she clawed, in vain she stamped. Her rival was insensible to pain, and clinched her hold the tighter.

Margot was strangling fast. Her eyes were shot with blood; her beak gaped wide to ease her lungs; her heart raced pulsing, throbbing.

And round her stalked the sisterhood, and clucked, and sizzed, and giggled.

The screams grew weirder, wilder. The combatants had plumbed the depths of hate. They fought for life, and voiced their agony, fighting.

But suddenly came swish of soaring pinions, and, round the duel, stillness.

Clear-marked against the skyline rose a Man.

Margot had seen him instantly. She checked her screams, and wrestled on in silence.

Her ravel could see nothing but her enemy, and miauled and screamed at random.

The Man loomed higher, higher still. He towered colossal over them, shapeless, fantastic, terrible.

His footsteps crunched the hoar-frost jewels to powder, and left broad muddy smears behind. His breath steamed on the frosted air, and hung impure about his clumsy going.

And Margot-knew that Death minced in his wake.

His shadow crept across her. His vastness blotted out the sky. He fixed cold, pitiless eyes on her, and, on a sudden, shook and rocked with peal on peal of laughter.

A droll bird this. The dragged plumage tickled him; the terror-haunted eyes; the treading feet.

He stopped and Margot shivered.

She felt her feet clutched by his horny fingers, her head racked from her body, her windpipe tautened, strictured.

It was the end. Her wings dropped limp to either side. The death-sob jerked and rattled in her throat. Her mind reeled into darkness.

But suddenly the lower grip relaxed. Her rival's claws were roughly forced apart. Her neck was freed. She breathed.

The Man alone now held her.

He gripped her feet, held her breast-high, and stared at her with goggle eyes and thin-lipped, sneering mouth.

And Margot, screwing round her head, stared back. She could not understand. She only knew that she was prisoner, that she had lost her forest.

Yet she made bid for freedom. She wrestled with his sturdy grip. She stabbed her beak against his fist, with strength born of despair.

The Man's fist was hard as oak.

He jerked her head away from him, and mocked her frantic writhings. But soon he tired, swung off his back a cage of latticed wire, unhasped the door, and thrust the prisoner in.

Margot had felt the unloosing of his fingers, and, for a moment, thought herself at large.

She flung at the unyielding wires, and stabbed and pecked and scratched at them. Her feet slipped past their barrier and clawed the air beyond. With wings a-whirr she leapt, and fell back stunned. She bruised her head, her feet, in vain. The rigid wires defied her strength; she could not bend a strand of them.

And over her the invulnerable hand, the pitiless, mocking, terrible hand swung on its swivelled ring the jolting cage which held her unknown destiny.

Strange sounds, and diverse, drummed upon her ears. She paid no heed. One thought beset her mind—to get away; one hope possessed her senses—to break or bend the wires.

A wall of nightmare faces rose about her. She knew not how the wall came into being, or how the crowd which formed it multiplied. She grasped no differences in men, no individuality, of height, or face, or gesture.

All smelt the same; all were her captor's friends, friends leagued with him to compass her destruction. The circle moved along with her, with shouts, with boisterous laughter.

And Margot, who knew nothing of Man's voice, thought every cry a menace, a call to others of the tribe to share an easy kill. So had she seen a flight of crows wing screaming to a crippled hare, and peck her eyes, and eat her where they found her.

Each shout, each laughter-peal from human throat, stabbed at her heart, and froze her young warm blood.

And suddenly the day was blotted out—in chaos of fantastic sounds, of heavy airs, of noisome, musty odours.

With rounded, terror-haunted eyes she cowered before this darkness in the noonday.

The stench, the gloom of four-walled room at first

bemused her mind. Her vision cleared to probe a lead-grey murk, which was half night, half day.

She was a prisoner in Man's lair, the frowsy parlour of the village pot-house. Half-kitchen this, half lounging place for toppers who had credit. The slate hung obvious on the wall. It was ill-lit, ill-furnished. Low tables flush against the walls, littered with beer-stained tumblers; low benches running past them; a sink; two greasy roller towels; a copper with a blazing wood fire under it; the walls hung randomwise with gear, with pans, with sieves, with colanders. The ceiling crossed with rods of iron, from which iron hangers dangled, and bore the weight of bacon-sides, and sausages, and hams.

The chimney-piece was dominant. It rose pyramidal from a twelve-foot base, with hinging flaps to ease or loose the draught, with stove and elbow-jointed flue. A scent of curing thickened in the air, the juniper that had embrowned the hams.

Three loafers sprawled half-fuddled round a table. Man's mate, full-breasted, red of face and arm, made racket at the sink. The crockery chinked, the tin-ware clashed and jangled. Husband and children helped—and hindered her. Margot was for the children—at a price.

The cage was dumped down roughly, rattling the dreg-fouled, finger-printed tumblers; and Mau lurched round inquisitive.

Arms swung, hands clapped together; and Margot's terror-stricken eyes froze in a rounded stare.

The children's fingers ventured through the bars, offering, imploring friendship. But Margot saw a threat in them, and backed away, and cringed.

Though baby fingers had no claws, fear kept her sharp-edged beak tight closed—fear of the chink and jangle of the glass, fear of the drowsy lolling heads, the bulldog necks, the liquor-swollen bellies.

What bird of prey was terrible as Man?

These ogre mouths drained at one gulp the measure of an ox's brimming mud-print; these gobbling jaws would bolt her whole, engulf her in a maw unfathomable.

That Man was enemy she knew. What of Man's tools and implements? The flashing knives, his instruments of death, whose blades clove crusted slabs of bread like lard; the copper-ware which jangled at a touch; the grids; the high-suspended tube of iron, from which she seemed to catch the stench of smoke, and memory of soft bodies dangling limp.

So fear of the unknown joined strength with fear of the unseen; but worse than these, more singular, more torturing, was the unnerving sense of her own smallness. These sprawling, lounging bodies towered colossal; they surged gigantic from the void, they fined away in mystery. Above them hung the heavy-cloistered darkness, which seemed to totter over her, the darkness of the impenetrable ceiling. With head hunched back between her wings, she shuddered at each grince of plate or tumbler; she shuddered at each scraping, creaking footfall, which marked the lurching come and go of Man. But in this nameless stress of mind, this vague delirium of fear, she found a grain of comfort. The cage itself was, in a sense, protection; the mesh-work rampart of the wires was proof against assault. She had not long to wait for disillusion, but for the moment this strange hope sustained her.

The day trailed past, its every moment haunted. Man came, swung glass to mouth, and went his way; and Margot only saw his smacking lips.

Yet no one sought to harm her. A few, the mischievous, caught up her cage and twirled it round and laughed at her bewilderment.

This strange assault made whirlpool of her senses.

It was the walls that spun about, the tables that upreared themselves, the men who swayed and danced like wind-bent boughs, the pots and pans which leapt at her, in dizzying whorls and spirals.

Night came at last, and Margot's eyelids drooped. She was worn out. Her roosting-time was past. Hunger and fear and weariness drowsed into broken sleep.

But suddenly she started. A draught of air had swept across her eyes. A human hand was near her! was groping round her body! was fingering her! was grasping her!

Then came a click—the prison door reclosed. And Terror grinned afresh at her—across the futile bars, and turned her blood to water, and swept her mind adrift from its sheet anchorage.

The cage, her fancied stronghold, had been breached. Her mind reeled under this fresh torment.

She backed and cowered as gleam and spurt of flame flung blaze of gold and crimson to the roof, and framed a vault of flickering lights and spectre-haunted shadows.

(To be continued.)

CORRESPONDENCE.

SUBMARINES.

To the Editor of LAND AND WATER.

SIR,—The activity of enemy submarines has no doubt drawn considerable attention to this style of craft. That some efficient means may be found to locate submerged vessels and thereby assail their comparative security from attack may be inferred from the fact that it is possible by microphonic means to hear the beat of their propellers. It remains to discover some system by which, either from variation in intensity of sound received or some other differential, an accurate determination of their position can be found.

A point, however, which has to be considered is the case of a submarine which, having taken up its position, silently awaits the approach of its intended victim. In such instance this method fails. The remedy necessitates the change from the measurement of direct to reflected sounds, and the effectiveness of such method will be appreciated by those who, travelling by train or car, have observed the variation in intensity of sound produced by such reflecting surfaces as walls and trees.

A further improvement in the means of determining the slight differences in intensity of sound from submerged surfaces consists in the measurement of their cumulative effects.

On such principles it is suggested that a reliable instrument could be constructed which would take from the submarine her means of self-defence and thwart the "frightfulness" it was her mission to inspire.—Yours truly,

DETECTOR.

GUN-DEAFNESS.

To the Editor of LAND AND WATER.

DEAR SIR,—In a recent issue an interesting letter appeared from Mr. Oldfield Thomas, with whom I have since been in correspondence, relating to gun-deafness. He recommends as "beyond comparison the best" preventive an ear-plug made as follows:

"Take a little piece of muslin, scrape off into it some of the wax of a candle, fold it up into a little pill the size of the ear opening, tie it round close above the pill with some thin thread, leaving tags; cut off the spare muslin, and that is all. The resulting plug, which looks like a miniature grenade, can be pushed into the ear at any time, fits itself accurately owing to the warmth of the body keeping it just neither hard nor soft, and can be pulled out again readily by the tags."

I have consulted an eminent ear specialist, who entirely approves of the idea of supplying these ear-plugs to the Army and to the Fleet, and I am willing to arrange for them to be made in considerable quantities if I can first be assured of a demand for them. I should therefore be glad to hear from officers in command of regiments and ships before putting the work in hand. I should also like to hear from any ladies who would care to help me should the scheme be taken up.—Yours faithfully,

(Mrs.) ANNE F. MASSY.

Hazelhurst, Sway, Hants.

THE SAILORS' AND SOLDIERS' TOBACCO FUND.

To the Editor of LAND AND WATER.

DEAR SIR,—We should be extremely obliged if the officers in command of hospitals where there are wounded soldiers would kindly communicate with us in the event of a donation of tobacco being acceptable.

It is a rule of this fund only to supply at the request of commanding officers, &c., in order that we may be quite sure that there is no waste.

Donations will be thankfully received to enable us still further to extend the scope of our work, as we have great difficulty in keeping pace with the demands that are made upon us.—Yours faithfully,

ROY HORNIMAN, Chairman.

MR. HILAIRE BELLOC'S WAR LECTURES.

Mr. Hilaire Belloc will give a further series of three lectures at the Queen's Hall on Tuesday, June 22, Tuesday, July 13, and Tuesday, July 27. Seats may now be booked.

Mr. Belloc will lecture at the Town Hall, Hove, at 8 o'clock on Monday, June 21, and at the Winter Gardens, Bournemouth, at 3.30, on Monday, June 23.

Mr. Belloc will lecture at Edinburgh (the Ussher Hall), June 16; Aberdeen, June 17; Stirling, June 18; Ayr (afternoon), June 19; Paisley (evening), June 19; the Town Hall, Hove, at 8 o'clock on Monday, June 21; and at the Winter Gardens, Bournemouth, at 3.30 on Monday, June 23.



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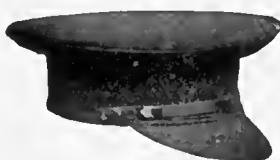
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EVERYTHING in daily existence has undergone a radical change, but nothing has been altered so fundamentally as the life of the girl of eighteen or twenty. For the first time for years she finds herself in a world making no special arrangements for her benefit. The events of a "coming-out" season, which many a girl had grown to regard as a matter of course, and her rightful due, are simply swept away. The customary course of life has been altered out of all recognition; there are no precedents to guide, little to steer by. We are all living a life which bears no resemblance to anything anybody has lived before. Older people learn adaptability with every passing year, but it is not such an easy lesson for the younger generation to digest. It has to be learnt, however, willy-nilly, at the moment—of that there is no shadow of doubt.

To do the girl of the present day justice, however, she is trying in every possible way to adapt herself to these new conditions of life. Things are too terrible, events too momentous to permit of small considerations. The vista of a first season has vanished for ever for numbers of girls, but what does it matter? An event which in past years would have been of great magnitude has vanished away to a minute speck. In less dread days it would seem a pity. In these it simply does not count. All that counts is happening within sound of the guns. All that is worth doing at home is to help the country in one form or another. This is true now, but it will become more true yet as days progress. Every girl now has a chance she did not always possess in times of yore. She can be of tangible use in the "scheme of things entire."

On Occupation

The most superficial observer must see that the main idea of the great majority of girls is to be occupied. The gospel of work is one, which has been preached for some time to womenkind; often in the past we have heard of some girl, born of parents of comfortable means, who has left her home to launch forth on her own elsewhere. We have shrugged our shoulders, murmured something about the restlessness of the age, perhaps gone a little further in thought and considered it a pity that well-to-do people should compete with those having their own bread to earn. But without doubt it was a sign of the times, a reaching out for the realities of life. Occupation is a blessing and a boon; it always has been so at all times and seasons, but now it is a veritable necessity. Without occupation most women at this time would go out of their minds. And if they are not seeking for it for themselves they are most certainly obliged to do so for their daughters. Youth is an energetic thing; vent must be found for this energy, otherwise the results are bound to be harmful.

The wish for occupation is one thing, the finding of it another. There are many signs, however, to show that opportunities are increasing, and that every girl will have a chance of proving her practical worth. War is a primitive thing, and we are back in primitive times. It is with the very simplest, yet withal the most important matters that every girl has to concern herself. If she is an expert at invalid cookery she should be hailed as a *rara avis*—she is a valuable asset to the nation at large. If she can sew, if she can scrub a floor well, if she can stay cheerfully at home, releasing a more valuable member of the family for service abroad, she is a help to her country; there is occupation in abundance for those who have the wit to see in which direction their own special talents lie, but it is occupation having little glamour about it. It is a case of sheer hard work. In no other way is a girl of any use at the present time, nor, indeed, from that point of view, is any one else.

From Small Beginnings

Once having made up her mind, however, that she must start from the beginning, and gain experience, the English girl is a power in the land. We are waking up to the fact that all that matters is efficiency. It is a pity we did not do so ten months ago, but it is better now than never. The day of the cheerful young creature, who did some "good work" to help pass away her time is over and gone. It is surely not too optimistic to hope it will never return. Girls are going into hospitals, and working until their backs ache, and they are limp with fatigue; they are running coffee canteens at home and abroad, and not shrinking one iota from the inevitable fatigue. From all accounts, life in a coffee canteen at the big military centres (Rouen, for example), is one of infinite variety. For a while there may be nothing to do, then there is a rush of business, and a girl's power is taxed to the uttermost. But all workers are agreed that it is splendid work, well worth the doing, and with the gratitude of customers for its crowning reward.

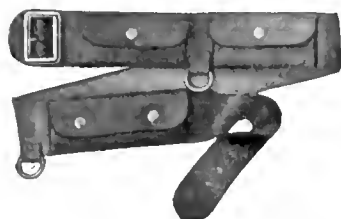
The need for training is one that most girls are sensible enough to recognize, and if they do not do so themselves, others are quick to recognize it for them. Heaps of girls who had left schoolroom days behind have practically gone to school again since the outbreak of war. The difference is that instead of learning many things, which fail to do them one ounce of practical good, they have gained most valuable knowledge. The intricacies of a custard pudding have baffled many an intelligence which made mincemeat of 'ologies in the past. Heaps of girls have gained a practical training of a kind, which would never have appealed to them before the world was turned upside down. And those who are still meandering in the old path of amiable inefficiency will ere long be forced to see the error of their ways.

The Girl of the Future

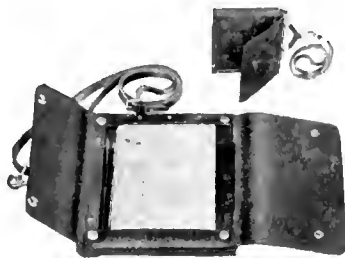
There is no one whom the present course of events will affect more deeply than the girls of a family. At such a time as this it is difficult to look for the briefest while ahead; everything is in the melting-pot, and the making of predictions is likely to be a waste of time. It is obvious, however, that it is the generation just growing into womanhood who will feel the change of conditions most. It also seems likely that many a girl who in the ordinary course of events would have married and had a home provided will now have to live her life alone, and depend upon her own resources. The carnage amongst our manhood can mean no other thing. And this being so, it is fortunate that it is the spirit of work that is being spread broadcast amongst girls to-day. As this year progresses we shall undoubtedly see girls in many fields of activity, which were either closed to them formerly, or in which they themselves had no previous interest. Women will engage in much which has been considered exclusively man's work. They will, from the sheer force of necessity, start many businesses on their own, which previously they would not have dared to attempt unaided. Posts will be offered them for which in the past no women need have applied. Already there are policewomen and messenger girls as a sign of the times, and it is impossible to say with what further deviations from custom we shall be confronted any moment of the day.

Life will open in some directions for women even though it closes in others. At any rate, the girl of the future will be far removed from the helpless being she was apt to be in the past, and the knowledge she has gained of nursing, cooking, and such like occupations will be a permanent asset to her.

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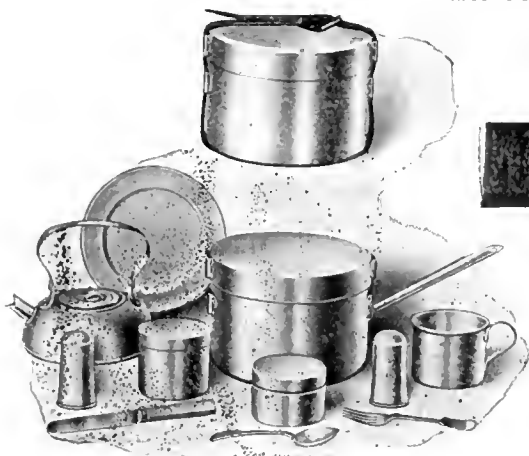
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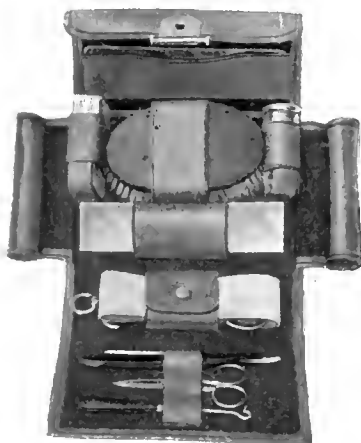
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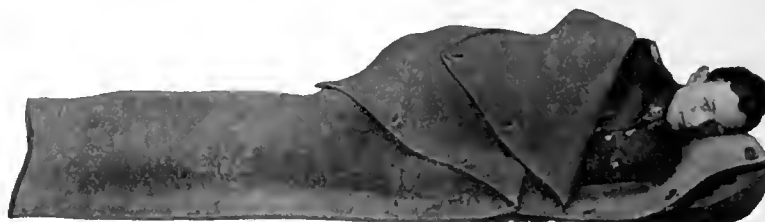


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AND
LAND & WATER

Vol. LXV No. 2771

SATURDAY, JUNE 19, 1915

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[A NEWSPAPER]

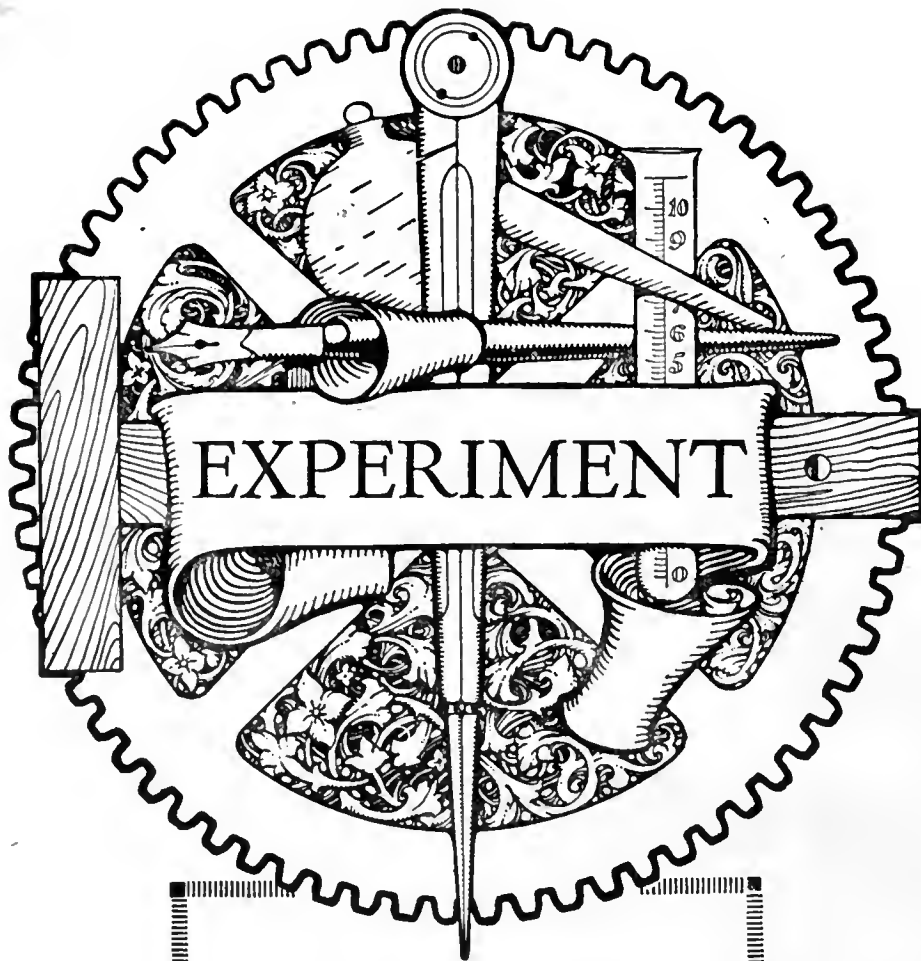
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THE LAKE

By J. D. SYMON

SOMEWHERE in the home counties it lies, sparkling in the June sunshine, the very eye of the landscape and an everlasting refreshment to the sight of the wayfarer. To the obvious charms of every pleasant expanse of water it adds one more, of curious and even whimsical suggestion, for this lake is not as other lakes. Although it falls into the picture with perfect harmony, so perfect as to proclaim it immemorial, this lake of ours is none of Nature's making. Two years ago it was not. A gently rolling countryside, sufficiently beautiful in itself, still lacked the relief of water, save for one or two streams, too slender to give any marked accent to the valley as viewed from the neighbouring heights. It was the one thing wanting; but some genius of the Urban District Council—a body not usually associated with genius, except in the practice of refined and cumulative extortion—saw what the landscape required and how it lent itself to this adaptation, worthy for once in a way of the name "improvement." A wide marshy basin at the confluence of several little rivers lay handily inviting. Perhaps, although local tradition is silent on the point, a lake may have shimmered here long ago. Probability lies that way, for the appropriateness of the lake to its surroundings makes it appear rather a skilful restoration than an arbitrary device. Artificial waters, styled "ornamental" in guide-books, seldom conquer their original sin of artificiality. Be they never so venerable, they bear their characters on their faces; but this little inland sea flings no challenge to the critical observer. He takes it for granted as a proper natural feature. If it lies, it lies splendidly.

The engineer's task was simple. It sufficed merely to remove some low barriers, and the waters of the neighbouring streams overflowed the basin just to the right depth. A little skilful embanking here and there did the rest. But the new embankment left no scar. The oozy ground already held clumps and lines of osiers in plenty. Up to their roots the flood lapped and paused, knowing its duty. Shy willow-screened backwaters, tempting as those by Isis and by Cherwell of happy memory, formed themselves without guidance; and the lake added to its seductions the sweetest attribute of boating rivers. Its charm became twofold. And there in peaceful days, dwellers among the Chiltern uplands, far removed from "Thames' broode backe," as Spenser sings, recovered with new zest an ancient sport too long denied. For the District Council aforesaid, ever thrifty amid its enlightenment, did not omit to furnish the lake with tolerable craft, wherein for a modest fee, on sunny afternoons or moonlit eves, you might "ply the oar with lusty limb" and with small stretch of the imagination fancy yourself at Pangbourne. The illusion is less fanciful than might appear, for the waters creep up almost to the base of wooded heights, very suggestive of Father Thames, and the configuration of the lake, irregular and deeply indented, yields many a pleasant surprise of vista. Here the oarsman is bound to no monotonous course as on the Serpentine (not that we have ever condescended to that rather dreary grind) and other less venerable "boating lakes"; he finds endless twists and turns, every one of which affords some new grouping of hill and wood or meadowland, and always there is welcome retreat, when a bout of strenuous practice has earned an hour with book and pipe under the willows.

But these are of the things that were. The mood of flannels has small place to-day in our scheme of life. So sensitive have we become on that head that some, it is whispered, are afraid even to be seen beneath that oriflamme of jubilant summer, the straw hat. Hence in these bright hours the lake is lonelier than it was this time last year. Civilians who put out upon its waters no longer seek after *dolce far niente*, the willows whisper their enchantments to deaf ears. Those who row, row in the strict meaning of the term, and the exercise is made contributory to one end, physical fitness. Otherwise it would not be approved or undertaken. The drowsy charm of moored craft, rocking lightly in the breeze, is pre-eminently an indulgence of peace. To-day it is grotesque, unseemly, a scandal in the able-bodied. Yet a little "slacking" still lingers by the lake-side—do not make haste to cry "shame!" it is perfectly lawful. For the slackers have earned their little hour of ease, of undisciplined paddling, of tea, tobacco, and chaff under the willows. They are not in flannels, no gaudy blazer proclaims them butterflies,

they would be none the worse of the abandoned straw hat. All the same they are hall-marked by their clothes, hall-marked and thereby enfranchised. You will have guessed who they are.

It is their hour of relief from the work that most of all matters in these critical days, when the nation's fortunes tremble on the razor's edge. All day these amateur watermen have toiled on land under the strict eye of the instructor. They are of that arm of the service with which in the first instance victory rests; it is theirs to lay the gun and direct the puissant shell to the battering down of defences too long opposed at fearful cost. They are, by the chief paradox of this strange war, the life-saving corps, in very truth the life-guards of the army. By the lake-side nestles the pretty village, where for the moment these artillerymen have their home; the thin shaft of its church spire rises white against the wooded hills, lending the last touch of the picturesque to a landscape typically English and rural. The township took on a new beauty when its spire and red roofs found their reflection in these quiet waters. Over all broods the very spirit of peace. Yet here, too, there is war, urgent and imperious, emergent at certain hours upon those rural ways. At early morn the guns and the ammunition column thread the lanes, moving with a brisk jolt and jingle, very different from the leisurely progress of the farm waggon, hitherto the usual disturber of the fields. And by the woodside above the lake, a sudden turn may bring you on a halted troop of horse, intent on map-reading. They pore upon their charts, compare the ground, dispute a little perhaps, and then it is "files about," and they are gone, phantoms of the summer afternoon, left once more to its rightful owners, the queesting bee and the clamorous cuckoo, whose voice is now grown a trifle languid. "In June he changes tune." Next June will he shout to a valley restored to its ancestral peace, himself, rude bird, the only peace-breaker? Perchance, by the grace of God and the gunner, it will be peace. So mote it be.

Leave the lake-side now (for none of us is in any mood for boating, and the boats are of right our artillerymen's) and come with me to the hill-side, to that very break in the coppice where the other day I surprised my map-reading troopers at their work. The view rewards the climb. It is one of the fairest and perhaps the least known in all the twenty miles around London, for the path that leads to this precious coign of vantage is labelled "Private." It is very wrong, no doubt, to commit trespass, but so you keep the path and do not stray into the coverts on either hand, the keeper winks at your iniquity and even condescends to a pleasant "good-day" as he passes on his lawful occasions. The view, with the happy trick of its kind, breaks upon the wayfarer as a surprise. The screening coppice ends suddenly, the ground falls away, and the eye ranges unfettered over many miles of delicious hill and dale. On the left twinkle the extreme northern heights of greater London, then from the spur of the Hill *par excellence*, rolling woodland sweeps encircling until it fades into the distance that holds Windsor undescried. Midway lies the wide valley where three rivers, flowing from diverse uplands, at length make common cause. And for centre and focus to the picture rises, embowered in foliage, that keen shaft of village spire, warden of the little town, whose name, if you are a curious student of Anglo-Saxon, will record for you the meeting of the waters. Up through the still air float chimes that mimic the very intervals and cadences of Magdalen bells, whose lazy notes to-day have sounded the tocsin for so many of her sons. Amid this rural peace the suggestion of war will not be denied. Even this English valley is a perpetual reminder of the strife, for it resembles, with a likeness more than fanciful, the valley of the Aisne. Line for line, from this view-point, it reproduces the contours of that hard-contested ground. The river, perhaps, is less insistent here, but its thin silver thread, fitfully seen through fringing pollards, is reinforced, right in the middle distance by what might well be the arm of a noble stream. For yonder beneath the spire glitters, long and irregular, a broader belt of water, the very jewel of the landscape, the last touch of its perfection, so harmonious in its repose, so well-accordant with the scene, that only the informed may know, and knowing gladly forget, that it is none of Nature's handiwork, but the gracious artifice of rate-gathering men, to whom much shall be forgiven for their lovely lake.

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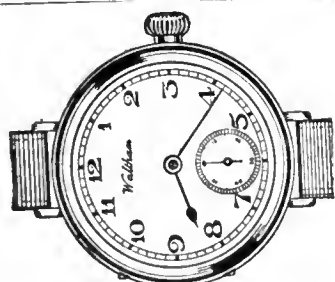
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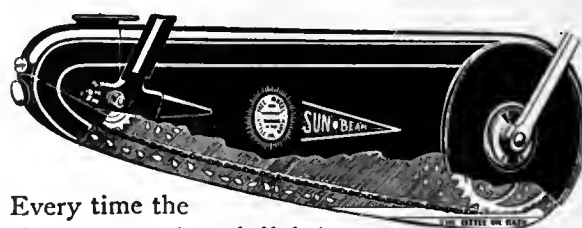
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THE WAR BY LAND.

By HILAIRE BELLOC.

NOTE.—This article has been submitted to the Press Bureau, which does not object to the publication as censored, and takes no responsibility for the correctness of the statements.

In accordance with the requirements of the Press Bureau, the positions of troops on Plans illustrating this Article must only be regarded as approximate, and no definite strength at any point is indicated.

THE PAST WEEK.

THERE has been no decisive action, even of the smallest kind, during the course of the past week.

The considerable movements to be expected in Italy have not yet matured. The work there is still the work of comparatively small bodies, well provided with artillery, preparing the way for the main forces which are to come up after full concentration is effected. Such as it is, that work consists in an advance against the Austrian railways system, as we shall see in a moment.

Upon the Galician front there has been a thrust back and forth that results in an undecided position. At one moment—upon June 10 and 11—it looked as though matters here had reached their turning-point, the last enemy offensive across the Dniester having been thrust back with very considerable losses of men and guns, but the effect of this success is lessened by a counter-stroke which took place within forty-eight hours to the north, and brought the enemy forces well across the San. The enemy even profess that our Ally is upon this front in full retreat towards Lemberg. But the situation had not sufficiently developed by Tuesday evening to merit any conclusion.

In the West there has been no more than a continuation of the slow but continually advancing pressure of the French concentration north of Arras and east of Soissons, unless we except a minor success in Lorraine. The Belgians have thrown a certain force forward on Dixmude. The rôle of the British containing the considerable German concentration in front of them remains the same.

In the Dardanelles there has been no change at all up to the news last received at the moment of writing; but the French Government have thought it advisable to issue an official document which tells us much what the general criticism of that campaign had already decided—to wit, that the task is very much more formidable than the too facile expectations formed in this country at its origin expected.

A statement of total casualties made by the Prime Minister in the course of the week is one of the most noticeable pieces of evidence we have upon which to base our estimate of the present phase of the war.

The chief of these points will be dealt with in more detail later on, but we may, perhaps, as a preliminary, this week consider the chances of that renewed offensive in the West upon the part of the enemy, which has spread like a sort of rumour, though without direct evidence to back it, during the last few days.

A RENEWED ENEMY OFFENSIVE IN THE WEST.

The chances of the enemy's abandoning quite shortly his long-maintained and now perilous defensive attitude upon the Western line have been discussed much more among the general public of Western Europe during the last week than has been the case for many months past. There is no official warranty for such an attitude. It is not a case of expert or secretly instructed opinion leaking out and informing the mass of opinion. The expectation is rather due to the great length of time that has passed since the fuller operations of the dry weather began and the absence during all that time of any big German move in the West. This, coupled with the continued postponing of a corresponding offensive on the part of the Allies (which was expected, by opinion general and particular, to be due at an earlier date than the present), has led to the suggestion mentioned above.

What the intentions of the enemy may be in the matter no mortal can tell. A mere prophecy upon it would be inane. But we can at least estimate the conditions under which such an offensive would be undertaken, and show what it would connote elsewhere. The chief points seem to be these:

(1) The enemy can undertake such an offensive without *wholly* abandoning his effort upon the Eastern front, though he would have to give up his hope of a decision there. The accumulation of shell which he has expended in that effort cannot represent his total accumulation, for even though, as is probable, the enemy is producing less shell in proportion to his numbers than are the Western Allies, yet the three millions odd which he is supposed to have accounted for in the Galician movement, even if this refers only to heavy shell, by no means represents his total possible accumulation of the winter and spring months.

(2) Since it is not lack of munitions that will prevent his attempting a renewal of this offensive upon the West, although, unlike his Eastern effort, he will there be met by what our Russian Ally can unfortunately not meet him with—that is, a weight of heavy gun fire superior to his own—the matter is rather a problem of men.

Now we know pretty accurately what the enemy's reserves of men are—at least, of men at all useful for his purpose, and excluding the boys and middle-aged people, whom popular journalism summons up to swell his figures; and from these known figures it is certain that if he attempts any great offensive in the West he must do so entirely at the expense of the Italian frontier. He can only concentrate men, sufficient for an attack on even one principal sector of the Franco-Belgian lines, by leaving everything south

of the watershed of the Alps to drift gradually into Italian hands. An offensive in the West must be the product of a deliberate policy—to give up trying to break Russia and to let Italy have her own way. Short of such a policy, his main strategy must still consist in attempting to break the Russian lines and to get at last his long-deferred decision in the East: when, and only when, can he move men back in sufficient strength to use them against both the Southern and the Western fronts.

(3) We must not mistake the vigorous local counter-offensive such as he will be virtually compelled to undertake (if he has not already begun it) by the increasing French menace to his main lines of communication.

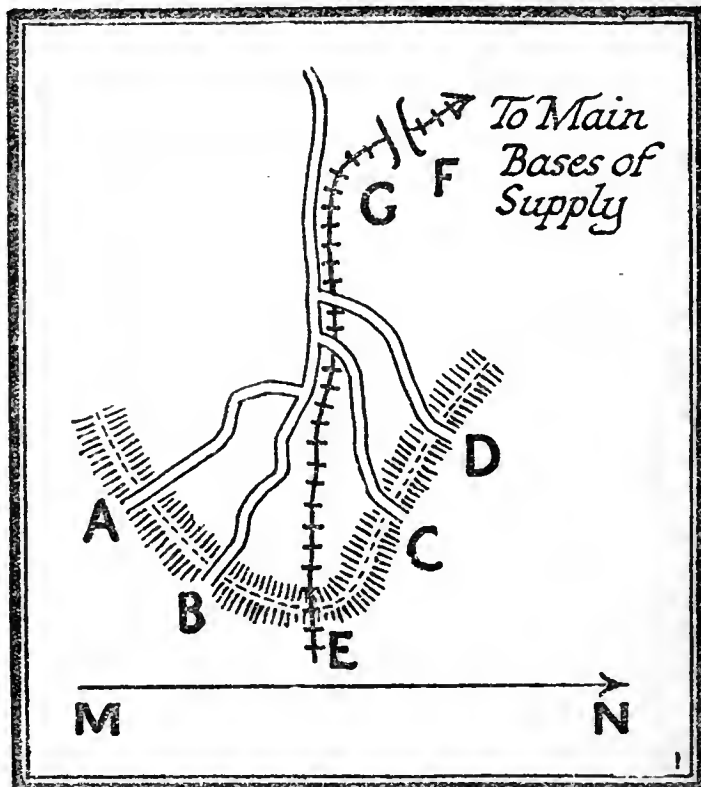
This local counter-offensive would be no more than a defensive measure intended to maintain the Western line, and not intended to achieve a decision against those who contain him there—not intended, that is, to break through.

A main offensive against the Western line would mean the concentration upon one single sector of it of certainly not less than ten, and better, fifteen, corps over and beyond those that are now standing from the Jura to the sea. That he can in the course of the summer obtain such forces by drawing upon all possible reserves and by maintaining the results of his Eastern advance without further attempting to pierce the Russian line is conceivable. That he can make this effort and at the same time undertake a sufficient defensive, let alone an offensive, on the Austro-Italian frontier is inconceivable. And when I say "he" I mean, of course, the enemy as a whole, for there is no distinction in this between the German and the Austrian forces, the moving of many men to one place meaning inevitably their absence from another, whether for the purpose of Germany or Austria is quite immaterial. Even in the matter of a siege train, where Austria had such a great advantage over Germany at the beginning of the war, things must now be equalised; but there is no proof that the human material of the Austrian service at this stage of the war is inferior to that of its ally.

THE ITALIAN FRONTIER: THE PRELIMINARY MOVEMENT FOR THE RAILWAYS.

Though it is already nearer a month than three weeks since the Italian declaration of war, the mass of the Italian Army has not yet brought its pressure to bear upon the frontiers. We are still only dealing with the movements of what it may not be technically correct still to call "covering" troops, but what are in numbers and purpose little more.

It is the business of this screen, as has been repeatedly explained in these columns, to make itself master of the issues from which the enemy could threaten the main Italian advance upon Trieste and the Istrian Peninsula. These issues—the passes out of the Trentino and over the Carnic Alps—were, when the frontier was drawn up half a century ago, numerous, and each served by a *road*. To-day they are still in their last segments the same and still dependent mainly upon road traffic. But these last segments are of no use unless the much rarer *railways* behind them are continuously open to receive men and munitions from the Austrian bases.



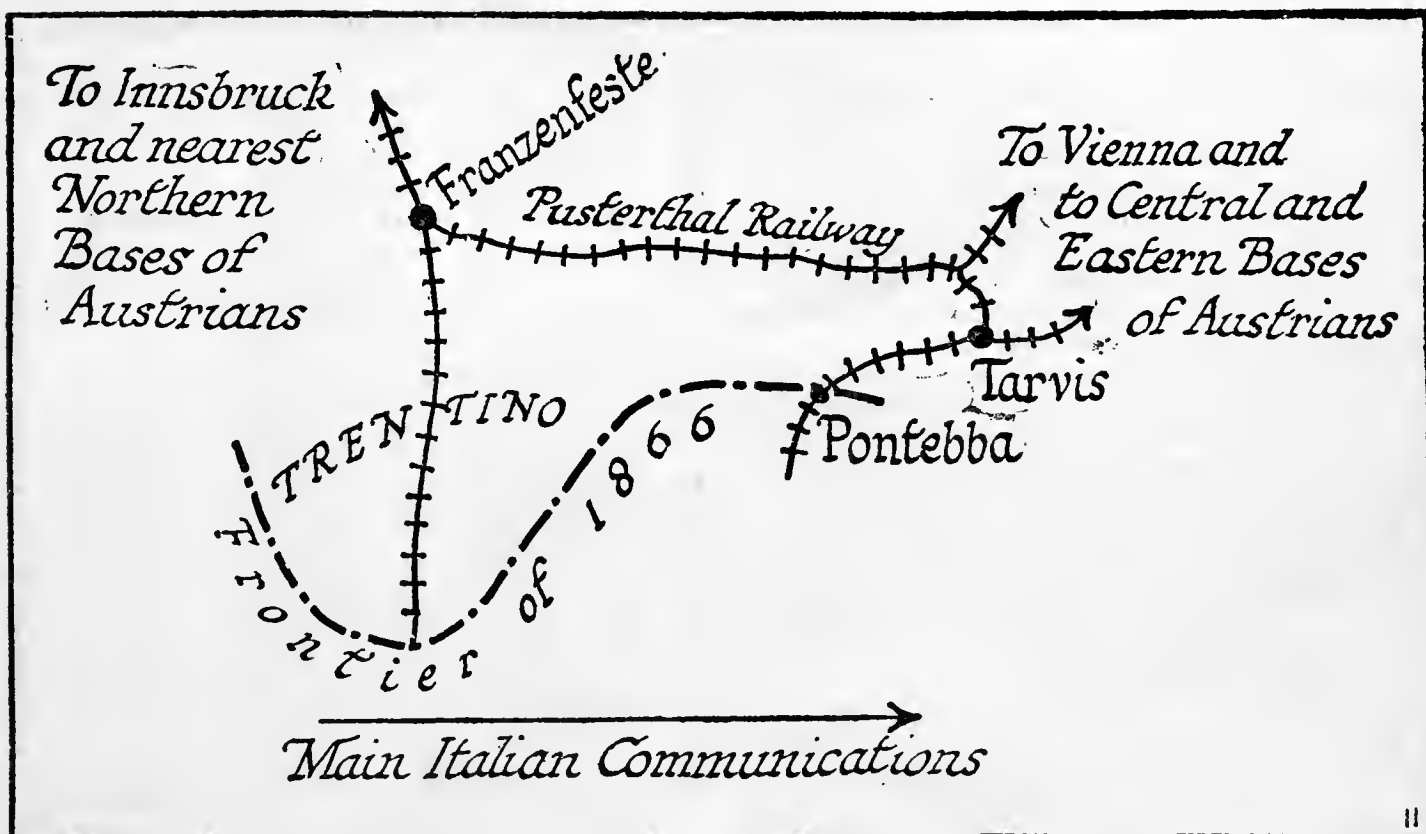
You cannot supply a modern army with its provision, especially of heavy ammunition, save by a railway. If, therefore, you have roads, A, B, C, D, issuing from mountain valleys and enabling you to attack your enemy's communications M—N, these roads, A, B, C, D, are no use to you unless the railway E—F behind them leading to your bases of supply is intact. If the enemy works round and cuts it, as, say, at G, your roads are useless. In other words, wherever the Italians isolate any particular road system of the Austrians from the railway system of Austria they close that avenue of attack against themselves.

As was explained last week and the week before, there are three main groups of railway with which the Italians must concern themselves. First, that which feeds the Trentino; secondly, the main line to Vienna and its tributaries through the Pontebba frontier point; and thirdly, the system serving the Istrian Peninsula.

The first is isolated if the Italians can isolate the junction of Franzenfeste; the second is isolated in some degree if they can isolate the junction of Tarvis; and the union between these two systems whereby one can help the other and troops and munitions can be massed laterally upon one or the other at will is destroyed if the line through the Pusterthal is cut.

As to the third system, that which serves the Istrian Peninsula and the towns of Trieste and Pola, it is a rather more difficult proposition.

The Istrian Peninsula and Trieste are served by three main lines, each reaching to enemy bases of supply. They may be put diagrammatically as in plan III. The first runs up the Isonzo Valley, through Goerz, past Tolmino, under the new great Wochein Tunnel, and so up to the direct line to Vienna. At Goerz itself is a bifurcation; two lines serve Goerz in its communication with Trieste, the one through Monfalcone, the other up the Branica Valley and across the plateau which the Austrians call the Karst. The first line is cut altogether if you cut it anywhere above Goerz, but Goerz can be provisioned by the lines reaching Trieste from the east unless *both* railways south of Goerz are also cut.

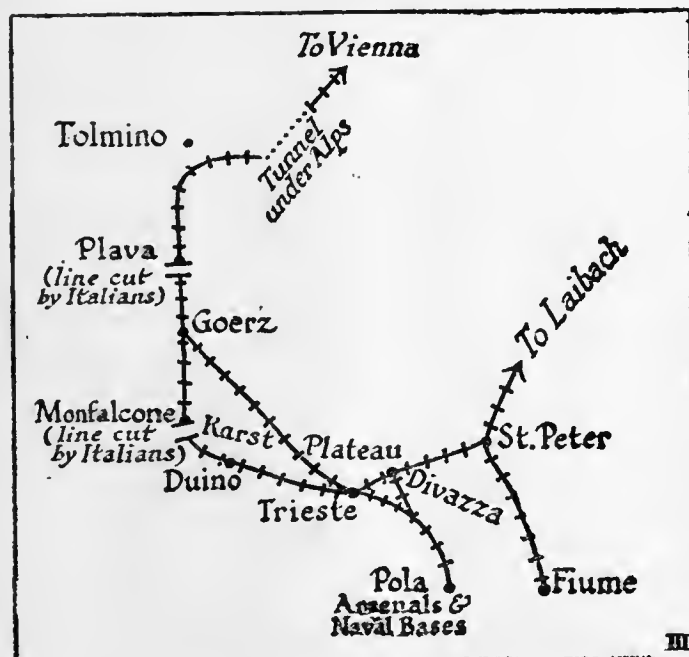


So far, the line as a whole has been cut at Plava. The Italian advanced troops have there crossed the River Isonzo, as well as seized the railway (which at this point runs on the western side of the stream). Trieste and Goerz and Pola can therefore no longer use the main and most direct line to Vienna. But Trieste is not cut off, because the Eastern railways by Laibach remain, and Goerz is not cut off from Trieste because,

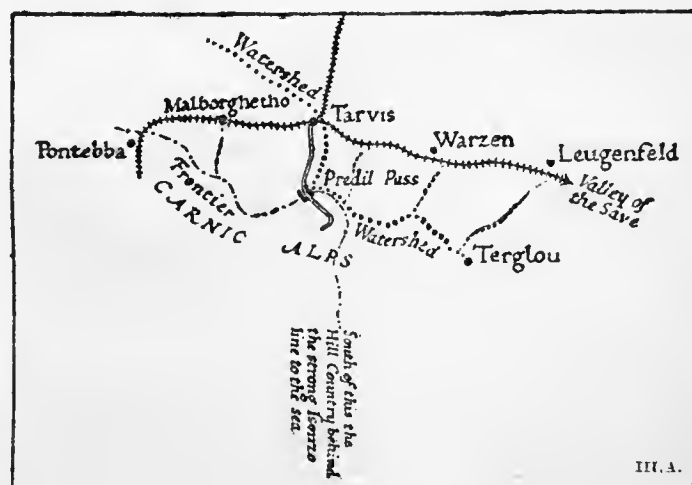
a nearer junction at Divazza would isolate Pola and Trieste, though it would not isolate Fiume, but it is probable or certain that this last junction is protected by the works which, temporary and permanent, will defend Trieste. It is only six or seven miles away from the outskirts of that town.

We may sum up, then, and say that on this third sector, that of the Istrian Peninsula, what the Italians have done so far is to cut the main northern line from Vienna serving Goerz and Trieste, but they have not as yet isolated the first of these places with its depôts and garrison, still served by the plateau railway; still less have they cut off Trieste, which is still amply supplied by the great line from the east and Laibach.

In the second sector, that of the Carnic Alps, the Italian advance along the railway has reached Malborghetto. That fortified position must be

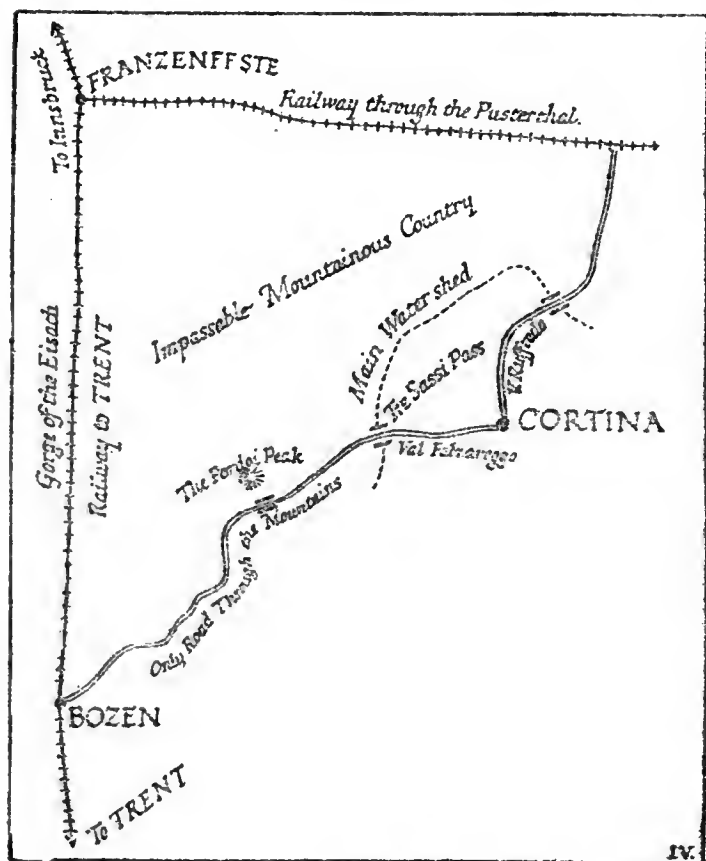


although Monfalcone has been occupied by the Italians, who have, indeed, proceeded as far as Duino, the second line across the plateau is still open. The line serving Trieste from the east will remain open until the junction at St. Peter is held, and that is still a long way off. If that were seized the whole Istrian Peninsula would be isolated. But there is no getting there until the works at Goerz are reduced, and even then the advance will have to be made for nearly forty miles over rather difficult country, lending itself to a strong defensive. It is true that the seizing of



reduced or masked before a direct advance can continue upon the junction of Tarvis. But there may be repeated what was said in these columns three weeks ago, that every point upon the Fella Valley can be turned by comparatively easy marches across the southern boundary wall of that valley. All mountain positions lend themselves to the defensive.

There remains the third sector, the prime objective in which is the Franzenfeste, the two subsidiary objectives in which are the cutting of the lines down the Valley of the Adige, above Trent, and through the Pusterthal. At this point we must carefully note, but not be misled by, the position of Cortina. Cortina has been occupied by the advanced Italian forces—in what strength we do not know. Two roads lead from it. The one to the Adige Valley, through the Falzarego Valley, and across the Tresassi Pass; another to the Pusterthal northwards. The mere distance from Cortina to the railways is twenty-five miles in the one case, as the crow flies, and only twelve miles in the other, and the observation of such short intervals has led to hopes which may be disappointed, or at least may be premature. The



Italian advance posts have, indeed, penetrated up both these roads for a few miles, but all the heavy work still lies before them. It is, as has been twice repeated here, the worst possible country for an offensive: a tangle of high mountains, and the main ridge of these still in front of our ally in either case. It is to be presumed that a very vigorous effort will be made to reach the Pusterthal and cut its all-important railway. There are positions not six miles from Cortina whence that line could conceivably be shelled, and a successful action upon the pass at the head of the Ruffredo would leave the advancing troops with a clear road before them down into the valley. But the task will be a hard one, and it is not yet accomplished.

The other, much longer, road to the west has this double drawback, that two ridges have to be crossed; that under the Pordoi Peak, as well as the Tresassi, and that even when the whole mountain road is forced and the railway reached, one only comes on to that railway at the lower end of the Eisach gorge, nearly thirty miles below the point of Franzenfeste, with no chance of a turning movement upon either side of that deep cut through the hills.

To get upon the railway near Bozen would, indeed, isolate Trent, but it would leave the enemy free to move troops from any one of his great bases towards the Adige again. To cut the railway in the Pusterthal would be to do much more, for it would prevent the two main lines from backing each other up, but it would still leave each of them independently able to act. To seize the Franzenfeste would paralyse the enemy altogether, but the Franzenfeste is precisely what it is most difficult to reach in all this system.

THE GALICIAN POSITION.

It is too early yet to say what exactly has happened on the Galician front, but the news received up to Tuesday evening presented the following situation:

(1) The main crossing of the Dniester at Zurawno, which the enemy had forced upon June 6, broke down badly, and the circumstances of its breakdown point to a cause precisely similar to that which has affected the successes as much as the checks of the enemy throughout the whole of this great offensive in the East—the factor of heavy artillery.

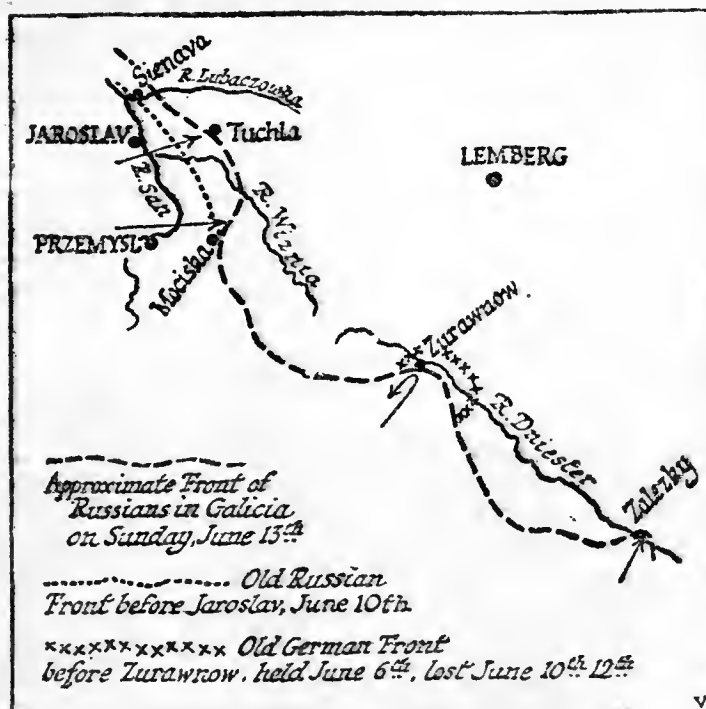
When his great guns are on a railway or close to a railway, and have behind them short good roads from railhead, the enemy can at regular intervals, imposed by the necessity of bringing up shell, pursue his advance. He does not break the Russian line, as is his object, but he pushes it further and further back with the spasmodic effort of heavy artillery acting every few days after it has time to acquire a further local accumulation of munitions.

But once you put an obstacle between railway and gun (even if it be only that of the Upper Dniester, with its muddy banks and bottom, and the absence of a good road upon the further side), so that his transport of big shell is hampered, the effort breaks down. We have had exactly the same thing repeated half a dozen times since the great Galician offensive began.

(2) Meanwhile, to the north, in front of Jaroslav, and as far north as Sienava and as far south as Mosciska, there has been a sharp advance upon the part of the enemy. He claims as many prisoners as the Russians counter-claim in their more southern success at Zurawno. But the important thing is not the number of wounded men picked up as one advances over the belt through which one's enemy has retired, but the strategical effect one has produced by one's advance.

Now, in this little sector in front of Jaroslav there is no good natural obstacle between the San and the district of Lemberg. The River Lubaczowka does not bend down southward enough to form a barrier. The true line here, as was pointed out when we analysed this front more than a month ago, is the line of the San continued by the line of the Wiznia. But the line of the Wiznia is turned once the San is crossed in force at Jaroslav, and to the north of that town, and the upshot of the matter is that if the German claim is well founded it amounts to this:

The attempt to force the approaches to Lemberg from the south by Zurawno have failed. Troops and munitions have been brought round to the northern sector, and a vigorous advance, which is in process of succeeding, and has not yet fully succeeded, is taking place there. The sector upon which the attack has been delivered



is further from Lemberg than the Zurawno sector; but, on the other hand, there are no considerable obstacles such as the Dniester in the way.

(3) A long way off—nearly seventy miles to the south—another crossing of the Dniester has been effected at Zaleszky, backed up by the railway from Czernowicz, and the whole Russian line has retreated from the Pruth to the Dniester, and, in the immediate neighbourhood of Czernowicz, to the frontier. But action down there, apart from its political effect of separating the Russian from the Roumanian forces and presumably delaying the entry into the field of the latter, has very little effect upon the general situation. The ultimate objective is still the breaking of the Russian line, or, alternatively, the getting well behind the line of the Vistula. The immediate objective is Lemberg, and action on the far south-east will not greatly effect either of these central objects save in so far as they retain troops occupied who might have been used by the Russians in the centre.

MUNITIONS AND PANIC.

IN the columns of this journal, under the date of March 6 (that is, three months ago), there appeared four pages of close matter under the title "The Call for Ammunition," and these columns contained among other phrases the following:

If you were to ask off-hand a man of good observation . . . "What is the prime factor in the problem of the trenches?" . . . a soldier anywhere near the higher command would almost certainly reply: "*Ammunition, and especially heavy gun ammunition.*"

And again:

This is the point we have to consider most carefully from now onwards, and it is one of those points in which public opinion and a grasp by civilians of the conditions abroad is of great value.

And again:

Public opinion, confused or ignorant upon these essentials, leaves the authorities without driving power behind them.

And again:

There is needed for the proper supply of the heavy guns and, therefore, for the chief factor to a decision upon the West, *all the heavy gun ammunition that the whole resources of the nation can turn out at the utmost speed and with the most vigorous resolution and skill.*

And again:

There can only too easily be an insufficiency or a hitch, and yet, on the continual increase of supply, *on the swelling and further swelling of its stream, depends the future of this country more than upon any other factor.*

And again:

One could wish that half the energy devoted to voluntary recruitment could be turned on to emphasising and re-emphasising this all-importance of the supply for which the heavy guns are hungry . . . for there lies the key.

In the course of those four pages much more was said to make clear and reasonable these very emphatic pronouncements. They appeared, I repeat, more than three months ago, and so much being said, perhaps there is no reason to say more upon that particular head, so far as this journal is concerned.

But my readers will rightly demand that reasonable criticism of the campaign shall include some explanation of the situation at present reached in the supply of big shell, which means, of course, big shell charged with high explosive.

The elements are perfectly simple. I will tabulate them:

(1) The preparation of an advance against an entrenched enemy is mainly a matter of high explosive shell. When you have thoroughly drenched a belt of such and such a width by a crushing bombardment, your infantry can occupy that belt.

(2) In this preparation you not only enter, but weaken, your enemy's line, for you make your enemy lose very heavily in men.

(3) The actual breaking of an entrenched line (a thing not yet achieved in this war save once—in December, before Warsaw—and then rapidly repaired) is dependent upon heavy shell charged with high explosive being discharged continuously for many days against the enemy, after a fashion to which he cannot reply on account of his inferior supply of similar munitions.

(4) Even if you do not break your enemy, but only drive him back from entrenched position to entrenched position, your effort depends upon the same factor.

(5) If you can so drive him back, even without at first breaking him, you leave him but little time to prepare new positions: you may hope to break him at the end of the effort. That is what the enemy has been trying to do in Galicia against the Russians for six weeks past.

The whole thing, then, is a question of high explosive large shell.

Now, once a steady advance begins you get, as the Austro-Germans have found in Galicia, and as I have described elsewhere this week, a very difficult problem, which is that of *communications*. It is not enough to have great quantities of big shell; you must also be able to move it forward as rapidly as your enemy retreats—and that is a big business. For handling big shell is like handling kitchen ranges or mill-stones. But for the initial effort, what you have to consider is your power of accumulating great masses of shell, which in number shall be something to which the enemy cannot reply, supposing, of course, that

you have sufficient weapons for the discharge of so much munition. It takes so very much longer to make, turn, fill, and fit a shell than it does to fire it off that the whole process of these "deluges" of bombardment is necessarily spasmodic. To borrow a metaphor from hydraulic engineering, you have to get a "head" of shell. You have to accumulate shell for very many days which will be discharged in a very few hours. Before undertaking a great offensive effort such as the Germans and Austro-Hungarians have just undertaken in Galicia, you must spend weeks or months in stocking up shell at your advanced bases of supply. The more you stock up the better chance you have of achieving your object. Therefore the longer you wait—in reason, and always supposing that the enemy is still tangled up elsewhere—the wiser you are.

It follows from all this that to press the production of shell to the utmost limits is the chief and obvious duty of a community engaged in modern war when met by siege conditions.

Whether it is wise to stimulate this production by dull official rhetoric, newspaper panic, or any other adventitious method I will leave it to others to discuss. At any rate, you cannot have too much supply.

Meanwhile, those who see the campaign as a whole are asking themselves such questions as the following, and everyone who desires to judge the position must ask himself the same questions:

Have we any proof that the enemy can produce shell, new linings for guns as those linings get worn out, new big pieces, &c., can fill and fit the same at any greater rate than can the *Western Allies*? It is, to say the least of it, doubtful; and until one has very good proof to the contrary one would—knowing the character of the various nations involved—doubt it. The enemy has made a mighty effort in Galicia. In spite of that effort he has not succeeded in breaking the Russian line, and therefore he has lost enormously in men—certainly not less than half a million—without so far having obtained anything like a decision, and he has expended in six weeks ammunition which it took him, perhaps, twenty weeks to produce. Italy alone has been for five months producing munitions with a clear comprehension of what this type of warfare has become and of what is needed for it. The French people have devoted their whole energy to the same end. Have we any proof that the enemy have done more? That they had an advantage over Russia in this matter, seeing that Russia can only with difficulty obtain supplies from abroad, that her industrialisation is not that of the West, that her communications and the rolling stock upon her railways is not that of the West, we all know. But would the higher command in the West regard the enemy's supply and accumulation of shell as superior to its own? I doubt it.

Next we must ask the question, can the production, such as it is, be increased in the West? Whether it can be increased in France or in Italy may be doubted. Those nations are conscript for war and are prepared with their utmost energies. That it can be increased in this country is obvious, for this country is highly industrialised, and is making a great many things, apart from those needed for the war. The economic support which this country can give to the great alliance demands active production in every field. But there is

obviously a margin for the increased production of shell. What that margin is only the authorities know.

Again, can the enemy obtain supplies from outside his own territory for the production of shell? If he can it is the fault of the blockade. That he has got cotton through for his propellant explosives we know. Why it has been allowed we do not know. But has he also got his material for shell? Italy has allowed nothing to go in since December, and if the enemy is getting for his production what he cannot find within his own boundaries, then it comes in through the North Sea, and the answer to that question is therefore political. It will not be discussed here, because it is also highly controversial, and depends upon elements in the international problem of which no layman has cognisance.

But the situation is quite clear. If the blockade is fully enforced the enemy cannot get supplies from outside his own territory, whereas the Western Allies can, and do.

But the production of shell does not only consist in the supply of shell cases, of copper bands, and fuses. It also consists in the high explosive for the bursting charge of a large shell.

Is there a shortage among the Western Allies in these high explosives?

In order to answer that question it can only be suggested that one form of high explosive, and one alone, can show some shortage, and that is T.N.T. It is not the most violent, but it is the safest form. It is that mainly used in the British, German, and Austrian services. Its basis is the destructive distillation of coal. In this country it has not paid manufacturers and coal-owners in time of peace to produce the raw material for this explosive in sufficient quantities. That there is any shortage in other forms of high explosive is doubtful in the extreme, and no shadow of proof that there is any such shortage has appeared. Without some evidence, we do well to disbelieve it.

I repeat that a belated newspaper panic or the commoner kind of political rhetoric may, or may not, be necessary here as a spur to the production of high explosive shell. One would have hoped not. They are not necessary elsewhere. If such means are necessary, by all means let them be employed for those upon whom they have useful effect. But let sober judgment recognise that while you cannot have too much of these munitions—always supposing that the guns and their repair keep pace with the possible rate of discharge—the probability is against the enemy's having in the West a superiority in munitions.

It is probable—I have not the authority to say it is certain—that in this, as in every other matter, the more developed and the more active nations have the advantage over the enemy. Whether this judgment is right or not only the development of the offensive in the West, when it takes place, can decide.

Meanwhile we may note that every very heavy and successful bombardment in the West, followed by an advance, has come *from* the Allies and has been *against* the enemy for weeks and months past, while the single example of a considerable enemy advance—that north of Ypres—has taken place, not through superiority of high explosive munitions, but through the unexpected use of poisonous gases, which novel method is now comprehended and met.

AN ANALYSIS OF NUMBERS.

UPON Wednesday, June 9, the Prime Minister made a statement in the House of Commons of the utmost importance for the comprehension of the war in its present phase. He gave at once the numbers and nature of the casualties suffered by the British forces in France from the beginning of the war to May 31.

Upon the wisdom or unwisdom of this publication of casualty lists no judgment is possible. The matter is a very close one for or against. The argument for is that a nation at war should know and understand its sacrifice. The argument against is that the enemy learns how it stands. That the arguments are strongly against such a policy is clear enough from the decision of the French and of the Russians to keep the enemy in ignorance. That the arguments in favour of such a policy are strong is clear from the fact that the Germans, and in a lesser degree the Austrians (who act under orders from Berlin), give their casualties—though in a belated form, and with a good deal of cooking and holding back of important cases.

At any rate, the practical value of such figures is that from them we can do something to estimate the real position of the enemy, for the British lists are rigidly accurate and brought right up to date. We know that there is such and such a ratio normally of wounded to killed, of missing to wounded, and though the lists tell us nothing of sick (who are at least equal to the slightly wounded in numbers at any given moment) they enable us to judge the *minimum* of the enemy losses from his own imperfect figures. For the enemy is absolutely certainly suffering, counting the Eastern and the Western fighting, more than the Allies, and immensely more than France and England.

Having said so much let us see what this official statement teaches us.

The very first thing we note is that the trench work of the last six months is much more expensive than work in the open field. The proportion of one in eight which was taken in all the earlier calculations of this journal as roughly accurate for the proportion of killed to total casualties was a true estimate, and, indeed, an under-estimate, before the war in the West became a matter of siege work. It will still be found probably a true multiple for the Eastern warfare during the recent Russian retirement and enemy advance in Galicia. But it clearly does not apply to the conditions of trench warfare, pure and simple, in which the shelling of marked positions does, in proportion to the total number of people accounted for, a larger execution in disabled and dead than does fire in the open field.

I believe it will be found true when an analysis is made that the multiple of one in eight for dead to total casualties up to, say, the middle of November, was fairly accurate. Since then the multiple has obviously lowered. And, I repeat, the practical value of establishing this multiple is that it enables us to gauge the enemy's figures—for upon a due comprehension of the enormous enemy wastage our judgment of the campaign and its chances must principally be based.

Since the trench work began, the multiple, as I say, has fallen. How far has it fallen? How

many men are really being put out of action as judged by the number of killed in the trench work upon either side?

The total number of casualties officially given to May 31 in the Expeditionary Force as a whole is 258,069, that is to date rather less than a third. Of these one-fifth are killed, four-fifths the remaining casualties. The multiple is, therefore, at the present day one to five in the particular forces in question, and the total casualties are exactly what general calculation has made them. Already somewhat over a quarter, but far less than a third, of the total forces engaged in every field.

At this point we shall do well—since our only practical object in dealing thus coldly with such sacred things is to judge the enemy's position—to note that a general list thus given after ten months' leisure for the establishment of statistics and with the very rapid final figures available to the British Government (the Germans are often months behindhand) gives the full total of those who have died, and therefore includes all those who have died of wounds or even of sickness in hospital, and appreciably raises the proportion of dead to wounded and missing compared with lists drawn up in the field as are the German lists, published most imperfectly after a great lapse of time.

We have, I say, a multiple of dead to other casualties of almost exactly one in five.

When we go into a further analysis we find that of the officers the killed make up nearly a third of the officer casualties, of the rank and file just less than a fifth. Such a disproportion is not abnormal and may pass without comment. It is to be adversely judged in one of three cases:

(1) When the men need leadership beyond the ordinary—in which case the officer losses are exaggerated.

(2) When, during a great retreat, an army breaks down and the missing show very few officers in proportion to the rank and file.

(3) When there is heavy mortality from causes other than battle casualties, such mortality commonly falling more heavily upon the rank and file than upon the officers.

None of these three elements have been present in the case of the British Expeditionary Force, and those who read these figures have reason to be proud of them.

The next point we note is that the rate of loss is declining in proportion to the number of men employed. There was a moment in mid-winter, perhaps, when it was rising in proportion to the number of men employed. But the curve passed its maximum in the course of the winter. Thus, it is instructive to note that as early as the end of October more than a fifth of the present casualties had been experienced, although up to that time the very large reinforcement of the Expeditionary Force had hardly begun.

The following three months only doubled the casualties. In other words, twice the amount of time accounted for twice the amount of casualties, although the amount of *men* present was increasing continually. The succeeding four months rather more than doubled the casualties noted up to just after the end of January, and the rate thus established was more or less

normal to the type of warfare, for the reinforcements provided were at about the ratio of the increasing casualty roll. The latter period included two or three considerable local offensive movements with their heavy toll of men, and (it is important to remember this) the deaths in hospital of men wounded earlier, when the larger reinforcements were just beginning to come out.

We next turn to the proportion of missing. These are very nearly exactly one in five, and give us, as to the whole force, something like one in seventeen. That also is important, because, in estimating the results of the campaign, it is valuable to calculate as best we may the enemy missing, remembering that on the Western front the form of capture is precisely the same upon both sides, consisting, as it does, of wounded men picked up by the opposing sides whenever the line fluctuates and of small batches of unwounded men surrounded and cut off. Though even here we must make the remark that the great preponderance is in favour of the Allies. With the exception of the surprise due to the use of poisons north of Ypres upon one particular day, the individual actions upon the whole Western front have resulted in the capture of perhaps two Germans to one of the Allies.

This result has not been apparent upon the British front, where things have lain more or less even. But if you consider all the local French actions in front of Alsace, in the Woeuvre, in Champagne, and latterly north of Arras, I think this estimate will be found fairly accurate when statistics are available.

Now let us put our conclusions together. They mean, with regard to missing, that the enemy cannot have lost less in his dribblets of prisoners upon the Western front since the trench warfare began than 100,000 men. He has probably lost more, but he has not lost less.

They mean that he may safely multiply his admitted killed in the official lists by six to get his total casualties—there is no doubt that this multiple of six is too low, for the names of his killed often come in in very belated fashion. And on the Eastern front the great mass of his work has been done in the open field. Well, to appreciate losses from this cause alone—wounded and missing, excluding sick—we have only to discover the Prussian lists of killed (which are published), to add rather less than one-fifth for the non-Prussian lists of the German Empire (which are also published, though less easily obtainable), to add eighty per cent. more to this total for the

Austro-Hungarian contingents (for that is about the proportion these Allies furnish to the Germanic Powers as a whole), multiply the result by six, and we shall get the enemy casualties, excluding sick, upon the basis of the British casualties, which are the most accurate, detailed, and up to date of any given in this great campaign.

I repeat, without fear of being belied by actual statistics when these shall be fully available, that such a multiple of six is, for the enemy, insufficient. The Austro-Hungarians have lost enormously more in prisoners in proportion than have the British; the German lists are belated, and the lists of killed refer mainly on their side to those immediately killed in action, &c., &c. But take a multiple of six as a conservative estimate, and excluding sick you have, *before* the big and enormously expensive Galician adventure was undertaken, about a million and a third in the Prussian lists with killed to total casualties one-fifth under the true ratio. Call the Prussian lists a million and a half up to the big Galician effort and you are not in any great error. And, say, 300,000, or a trifle less, for the rest of the German Empire, and you are near 1,800,000. Add eighty per cent. for the Austro-Hungarians, and you get about three millions and a quarter.

Now, that is excluding sick. It is cutting down the very high rate of wounded in the open manoeuvring of all the Eastern war. It is excluding the mass of the great Galician effort, which cannot possibly account for less than half a million men upon the enemy's side, counting the lighter casualties and sick, and it is excluding the very large proportion of Austro-Hungarian missing through disaffection and capture in every stage of the campaign, and particularly in the earlier part of it.

Conclude that the enemy as a whole has at the present moment much nearer four million than three million men permanently out of the field and you are making what is called in commerce a conservative estimate.

The mood of those who desire to control public opinion in this country at this moment—for what object I know not—is adverse to the mildest and most just conclusions upon what is called “the optimistic side.” I cannot help that. Arithmetic is arithmetic, and a sound judgment based upon real things is worth all the sensationalism in the world. The enemy's potential manhood for actual fighting within the first year has *probably* been diminished by nearly one-half from all causes. But it has quite *certainly* been that I have quoted.

A GENERAL SURVEY.

(Continued.)

I SAID last week that after the German and Austrian motive in preparing and launching this war the next point to be considered was the *theories* of the coming war—i.e., the guesses as to its probable nature—with which the enemy entered it. For on the rightness and wrongness of these guesses depended the issue.

The enemy's theories with regard to modern war in general and the coming campaign in particular must be distinctly tabulated if we are to grasp both the measure of his particular success

and of his general failure, and each must be numbered so that we may refer to each and show in what it was a just judgment or the reverse. Those theories are as follows:

(1) Under the political conditions of the French a blow struck at Paris would necessarily have one of three effects, either of them fatal upon the numerically inferior French forces. Either (a) it would lure the French Army as a whole to the defence of Paris, and therefore bring it up against the numerical superiority of the in-

vader; or (b) it would divide the French forces into an army attempting to hold the frontier and forces attempting to save the capital; or, what is most likely of all, (c) a plan having been finally decided upon by the French General Staff and involving the abandonment of Paris would, when danger actually threatened, be overruled by political considerations and would fall into chaos.

In either of these three contingencies the French Army was doomed to destruction. In the first it would be destroyed as an inferior force pitted against a superior one. In the second, those forces used for the defence of Paris would be separated from the rest of the army and each would be defeated in detail. (It was, in fact, this situation upon which the Germans gambled and lost just before the battle of the Marne.) In the third, they would simply be an easy prey, which they had been in 1870, at the mercy of a resolute, superior, and united enemy.

(2) The march on Paris is obviously best achieved through the Belgian plain from the frontiers of Luxemburg to those of Switzerland, the French having a fortified frontier, a reduction of which would check an invasion whose success was essential to the general scheme. No obstacles as formidable threatened an advance through the Belgian plain. Further, there was here the best set of railway communications in especial, and the whole advance was backed by the best railway communications in Germany—to wit, those through the industrial districts and flat country which forms the north of the German Empire.

Now to this advance through the Belgian plain there existed as obstacles the fortresses of Liège and Namur, and possibly some resistance from the armed forces of Belgium in the open field. But, in the first place, the enemy did not believe that the Belgian trained forces, such as they were, would offer resistance. In the second place, supposing Belgium to make some sort of resistance, he was aware that no sufficient body of trained troops, particularly gunners with their munitions, existed for the defence of the Belgian frontiers. In the third place, he believed he could deal with those frontiers after a fashion, which concerns the next point in this table.

(3) The third theory upon which the war was waged by the enemy was that modern permanent fortifications would give way very rapidly—in a matter of a few hours or days—in the bombardment from great mobile howitzers, such as the Austrian service especially had designed and produced. All that was required was a sufficient concentration of such fire upon one sector of the ring defending the fortress, the long range of the large mobile howitzer—Austrian, remember, not Prussian in its conception and design—rendering it almost invulnerable to the flat trajectory of the guns of the fort.

(4) The fourth theory of the war upon which the enemy relied was the power of modern machinery, notably that of petrol traffic using good roads. It seemed to the enemy obvious that your modern advance, holding the enemy unit for unit, would, with a superiority of numbers to spare, always be able to come round in flank with a good road system and with ample provision of petrol vehicles with which to move troops.

(5) The fifth theory of the enemy was of a negative type, and concerned both rifle and field-gun fire. We must not exaggerate this theory,

but it is worth study in its true and moderate form. In such a form it may be put thus: The superiority of a really quick-firing field-piece, such as the French seventy-five; the superiority of good fire discipline in your infantry and accurately aimed shots from the same is an asset of the defensive rather than offensive type. Other things being equal, of course, the more rapid your delivery of shrapnel against the enemy manœuvring with liberty, and the more accurate your rifle fire against him the better for you. But these will not be the deciding factors if, in reliance upon them, one sacrifices that conception of attack which is the soul of the Prussian system, and which is at bottom the idea of a swarm. Better a worse field-gun, with slower rate of firing and a less accurate service; better infantry imperfect in their training as riflemen, but withal men trained to stand very heavy losses in close formation, than the very best field artillery in the world and the most perfect fire discipline in the hands of men who are compelled to deploy thinly and who fear the heavy losses of massed attack.

(6) Get your men to stand very heavy temporary losses while they attack in swarms, and those losses will be met amply, for they will be a good investment. Because, though the trial will be very severe while it lasts, it will be brief, and such a form of attack will be decisive.

(7) Finally, even against troops in the open and for general purposes of war, as, for instance, against trenches, let alone against more or less permanent work and the more elaborate field fortifications, see that you have an ample supply of high explosive shell. It will do more against troops in the open than the French theorists have allowed, and it is a sort of reserve power for all sorts of unexpected conditions that may arise.

(8) On the defensive a well-handled and large supply of machine guns will be your best standby. Those were the main theories upon which the enemy relied as he went into action with, I repeat, the moral certitude of immediate and decisive victory.

As we shall see, he was right in some of these theories, wrong in others, and those in which he was wrong were precisely those which caused his failure, but those in which he was right brought grave embarrassment to the Allies, strengthened his own power of resistance, and prolonged the war in the fashion we all know. Where he was right and where wrong we will next discuss. After that we will proceed to the new and unexpected developments of the campaign after the enemy had failed in his first stroke, notably, to the development of trench warfare or siege work, and to the corresponding novel necessity of heavy artillery supply, three, five, ten times as great within a given time as any previous student of war had allowed for.

H. BELLOC.

(To be continued.)

MR. BELLOC'S LECTURES ON THE WAR.

Mr. Hilaire Belloc will give a series of three lectures on the War at Queen's Hall on Tuesday, June 22; Tuesday, July 13; and Tuesday, July 27. Seats may now be booked at reduced prices for the series.

Mr. Belloc will lecture at the Town Hall, Hove, at 8 o'clock on Monday, June 21.

At 3.30, the Winter Gardens, Bournemouth, Monday, June 28.

At 8 o'clock, the Speech Hall, Wycombe Abbey, High Wycombe, on Wednesday, July 7.

THE WAR BY WATER.

By A. H. POLLEN.

NOTE.—This article has been submitted to the Press Bureau, which does not object to the publication as censored, and takes no responsibility for the correctness of the statements.

SINCE Italy became a belligerent, and entirely altered the prospective rôle of the Austrian fleet by threatening the territory in which its ports are situated with invasion, there has been no other change of any moment in the naval situation. If the United States becomes a belligerent, there will be an important change, because the strength of the Allies in the North Sea will have reached a point as will relieve the English military command of all anxiety as to raids or invasions. And President Wilson's Note seems to make the belligerency of the United States far more likely — a question that I will discuss at greater length below. In the meantime, there has been a certain amount of activity in the Baltic, in the Adriatic and in the Black Sea, but none of the actions have been of first-class importance.

THE GERMAN THREAT TO RIGA.

We have now some further information as to what took place north of Libau and between Gothland and the Gulf of Riga, on June 3, 4, and 6. The first stories that reached us led one to hope that quite serious damage might have been done to certain units of the German battle fleet. But, while it is not specifically contradicted that no battleship was hurt, it seems more probable that the only casualties suffered by the respective sides were the loss of the former mine-layer *Yenesei* by the Russians, and the loss of the transport *Hindenburg* and a destroyer by the Germans, and the wounding of one other German destroyer and a cruiser. The German occupation of Libau creates a somewhat anomalous position, and seems to have led the temporary holders of what is neither a naval port nor an arsenal into certain adventures which have not turned out very successfully. On June 3 and 4 a squadron of ten battleships were sent to operate in the neighbourhood of the Gulf of Riga. This squadron was accompanied by destroyers, cruisers, and other auxiliaries. But the approaches to the Gulf were protected by Russian submarines, who, on meeting this Armada, fired several torpedoes at the ships and dropped mines over the courses it was assumed they were going to take. The submarines had to dive before they were able to verify the effects of their torpedoes. But explosions were heard, and it is believed some battleships were struck. On the following day a second encounter between submarines and German vessels took place due north of Libau, between the Island of Gothland and the small coast town of Windau. In this encounter one German destroyer and transport were sunk, a small cruiser and another destroyer hit and damaged. The damaged cruiser was towed back to Libau. Two days later, on the 6th, a German reconnaissance, supported by "units of great power," found submarines in its course and withdrew, but not before the *Yenesei* had been torpedoed. So much for the news.

It is difficult to give any connected explana-

tion of what these different manoeuvres may signify. If the German battleship squadron consisted only of pre-Dreadnoughts, it would hardly have ventured to enter the Gulf of Riga, where the more powerful Russian fleet could apparently have trapped it. And one does not quite understand why the Germans would risk their main Dreadnought fleet in waters that are mined and frequented by submarines, unless the military object were of extreme importance. But the occupation of Libau and its rumoured conversion into a submarine base does seem to show that the German invasion of Courland was intended to be something more than a demonstration. It is possible, therefore, that Germany may be contemplating combined operations with a view to turning the Russian right. It is characteristic of the extreme secrecy with which all naval operations, if they are to be effective, should be conducted, that neither side gives more than the slenderest scraps of information about these exceedingly important events.

THE BLACK SEA.

The Russians have raised the Turkish cruiser *Medjidieh*, which they sank just over two months ago, and have taken her into Odessa. The *Medjidieh* is a ten-year-old American-built cruiser, armed like our *Glasgow* class, but with a speed of only 22 knots. It is quite possible that within a very few months she will turn out to be a valuable acquisition. In the meantime, the fastest of the cruisers on the Turkish side, the *Breslau*, fell in with two Russian destroyers on the night of the 11th, and was vigorously engaged. One officer and six men were wounded in one of the destroyers, and the *Breslau* was hit several times. A succession of explosions was observed on board, and the bows were in flames before the action was broken off. The general campaign against the smaller Turkish ports, which has been carried on ever since Russia got command of these waters by putting the *Goeben* out of action, with a view to cutting off Constantinople from all sea supplies, continues vigorously. Samsun, Zunguldach, and Kosla have been in succession bombarded and the shipping sunk.

THE ADRIATIC.

Since writing last week Monfalcone has been occupied by the Italians, so that the destroyer bombardment may be assumed to have given effective help in this operation. The only other news is of the Italian intervention at San Giovanni di Medua, undertaken to make the Albanians release a convoy of Montenegrin corn ships. Vigorous shelling appears to have brought the Albanians to their senses, and the ships were released. The operation is interesting to us for the reason that a cruiser of the *Liverpool* class was assisting the Italians, and from the fact that an Austrian submarine appeared to interfere with the operations.

The cruiser appears to have been struck by a torpedo in the ensuing encounter, but does not seem to have been seriously damaged, as she was able to make the journey across the Adriatic at seventeen knots, and is reported by the Italians to be safely in harbour.

THE DARDANELLES.

From the Dardanelles there is no official naval news at all, nor for that matter any military news, except what is to be found in the French official reports. They are silent as to the co-operation of the Fleet. An Athens rumour states that an enemy submarine has been sunk.

But a remarkable reference to the Dardanelles operations has been made in Parliament. Speaking last Saturday week at Dundee, Mr. Churchill, it will be remembered, spoke of Sir Ian Hamilton's army as being separated only by a few miles from "such a victory as has not been seen in this war." Mr. Runciman, speaking five days later in the House of Commons, said he trusted that "the reopening of the Dardanelles would lead to a rush of supplies into this country." Taking the two statements together, there seems to be a very optimistic feeling in official circles as to the course which operations are taking.

GERMANY AND THE U.S.

President Wilson's final Note brings war between America and Germany nearer, just because it is final. The wording of the Note disappointed many who gathered from Mr. Bryan's resignation that it must contain some very peremptory sort of threat. Indeed, since the text was published the resignation has been represented as inexplicable, for the Note contains nothing that was not in the previous communication. But there is really no mystery in the matter. Mr. Bryan has been nourished on words and phrases—the "flapdoodle" of the immortal O'Brien. In the mouth of the mob orator it is not the *meaning* of words, but their comforting sound that makes merit. But in the mouth of a statesman speaking for a great country words mean action. This is the unpleasant truth that Mr. Bryan has discovered. So long as the submarine campaign could be kept in the region of talk, the late Secretary of State was in his element. It was only when he discovered that Mr. Wilson *meant* what he said that he resigned. Berlin may be pardoned for not taking America seriously, when America's own spokesman was so little serious himself. Berlin is probably as astonished as Mr. Bryan at finding that the comedy is over. It is not surprising that Herr Dernburg should be on his way to Berlin—under a British safe conduct—or that the Chancellor is delaying his reply until that active soul has arrived safely. The decision to be taken is a momentous one. The answer must be explicit—as explicit as the Note itself. Germany must surrender or face a new belligerent.

The elements that will decide her one way or the other are familiar. Desperate as Germany's military position appears to be, the hopelessness of her case at sea is beyond speculation. To add another combatant where the strength against her is already overwhelming might appear to leave the main issue entirely unaffected. She could not be worse off if all the world joined in against her. The submarine campaign is undoubtedly of a cer-

tain value. It is causing us a continuous and a serious loss. In shipping alone we are losing a million pounds a month. The cargoes may easily be worth at least as much as the ships. It is true that if we look at the vast total of the cost of the war, twenty-four million pounds a year is a tiny percentage. Viewed as a reduction of our shipping, our losses are but 75 per cent, of our normal annual output of new tonnage. It is not a serious percentage of our sea-borne trade that is sunk, so that whether we regard the thing as a tax on our financial resources, as a diminution of our trade, or as an effort to reduce our shipping, the blockade, as a war measure, is really harmless enough. Still, it *is* a financial loss; it *does* reduce our shipping; it *does* rob us of many valuable freights; it *has*, therefore, a certain war value. If American belligerency cannot greatly affect the results of the land fighting in Europe, and if, as one supposes, the German General Staff must now realise, nothing, in any event, is to be hoped from fighting at sea, then the German answer may be an emphatic negative, let the consequence be what it may. Other considerations will help to her deciding in this direction.

It is to be remembered that Germany is extraordinarily addicted to basing her policy on speculations which are generally recondite and invariably wrong. There is in the United States a large and extremely powerful section of the inhabitants that is German-born or of German blood in the first generation. This section contains many houses and firms, both Gentile and Jew, of great wealth, and a considerable proportion of them have maintained the closest kind of relations, not only with the Berlin financiers, but with the Court. For the last ten months they have been active propagandists of the German case in America. In the eastern States it is not their numbers, but their wealth and influence, that is remarkable. But in the middle west their numbers are very considerable—some cities and country districts being as German as almost any part of Germany. So long as America was neutral, they have been able to do a great deal, both indirectly and directly, to help the country of their origin. It is possible that Berlin has been led into supposing, first, that the number of pro-Germans in the United States is very much larger than it is—perhaps even into believing that *all* persons of German descent are pro-Germans. Secondly, they may suppose that those who have been pro-Germans up to now will remain pro-German—and so actively opposed to the national Government—if war is declared between the two countries. Both of these views I believe to be as profoundly erroneous as the suppositions that Ireland would rebel, that India would mutiny, that the South African Dutch would rise as one Boer, and that Australia and Canada would throw off the allegiance to the Mother Country, rather than face the inconveniences of being in a war not of their own making. On the other hand, Herr Dernburg has left for Germany, and it is possible that he is charged with the mission of cooling the undeceived but swollen heads of German statecraft. If, then, the Germans were inclined to risk a quarrel in the hope of internal schisms in America disarming Americans, Herr Dernburg might save her from so gross a blunder, and bring her to a compliance with the American demand.

One political consideration, and that neither

recondite nor wrong, should certainly make the German leaders pause before looking on the breach with America as inevitable. It is that sooner or later she will have to treat or sue for peace. It will be an ill day for her if she has no one in the world to act as go-between.

On the other hand, an acceptance of Mr. Wilson's claim goes much further than an admission of an American right and a willingness to pay the financial penalty for an invasion of it. The issue raised by America is quite properly raised out of the injuries inflicted on American ships and American passengers. But it is not a demand for compensation, nor merely a demand that American ships and American passengers shall not be injured in the future. From the nature of the case, America has to ask for more. She has to ask that this whole method of making war by submarines on non-belligerent traffic shall cease. It is only so that Americans can safely exercise their right to travel in the trading ships of belligerents. And she asks for it on the ground, not that such warfare is incompatible with international law—although it admittedly is—but because it is incompatible with the Ten Commandments. If Germany, then, surrenders she would admit a great deal more than that she had proclaimed herself false to the honour she had pledged in treaties and international conventions. She would be proclaiming that she had been false to the most elementary of all social laws, "Thou shalt commit no murder." Can Germany make such an admission now? As it seems almost impossible, it is a reasonable thing to contemplate the appearance of the United States as a belligerent as inevitable, and to inquire into the nature and character of the forces which she can contribute to help the Allies.

THE U.S. NAVY.

What is the fighting value of the American Navy? Its only experience of modern war was against the Spaniards in the war for Cuba in 1898. It was, of course, completely successful. But, take it for all in all, it was something of a humiliating success. All the glory of Santiago was quenched in an ignoble quarrel between the admirals. The fleet's gunnery was appallingly inefficient. The ratio of hits to rounds fired was derisive. But it is doubtful if any other navy, *had it been tested at that date*, would have come out of the ordeal any better. The gunners of our own Navy were not put to the proof till the 4.7's were sent to defend Ladysmith. So that they were not tested at sea. The truth of the matter is that the great revival of national interest in our Navy, which we owe to Mr. Stead's agitation in the middle 'eighties, was always limited to material, and never occupied itself with methods. Mr. Whitney's navy, which fought the Spanish-American War, was really just as much a product of the Stead campaign as the ships of our Spencer programme or of the Naval Defence Act. But Mr. Whitney not only built ships, but discovered Captain Mahan, and by that discovery produced an influence which affected the future of navies far more than any lessons that could be culled from the Spanish-American War. But it was not an influence on technique. There was an effective demand for more ammunition and better facilities for practice. But it was left for Sir Percy

Scott to realise that neither lavish ammunition, endless opportunity, nor boundless energy were sufficient *unless right methods were developed*. As all the world knows, it was on the China station and after the Boer War that Sir Percy Scott, still in command of the *Powerful*, worked out with his torpedo-lieutenant—the late Captain Frederick Ogilvy—the mechanical devices for training men to keep their guns steadily laid while the ship was rolling. Lieutenant Sims, of the American Navy, was on this station at the same time. A friendship arose between the two men, and a common interest in the gunnery problem led to many an exchange of opinion. At any rate, it was not long before the progress of gun-laying skill in the United States Navy was quite as marked as in our own. When we took up long-range battle practice, in the fourth and fifth years of this century, it fell to Lieutenant Sims to introduce similar methods in America. The two navies, therefore, have proceeded *pari passu*, both in gun-laying and fire control, and except that the United States have not adopted any form of director, I should imagine that in gunnery there is very little to choose between them.

AMERICAN OFFICERS.

The Naval College at Annapolis, through which almost all the officers enter the United States Navy, is recruited by a system of Congressional nomination. Each member of the Lower House appoints in turn to the vacancies that arise. Certain educational qualifications are required, but the elementary teaching in America is at once so thorough and so accessible to all, that this rule hardly imposes any restriction at all. The majority of Congressmen exercise their rights very conscientiously, and nominate their candidates after an informal, but very effective, examination. The lads so chosen come from every class of the population, and enter between the ages of eighteen and nineteen, and remain four years at the college. The education is very thorough in all the technical subjects, and every encouragement is given to the study of literature and history. The type of young man produced is of a high order, accomplished in mechanical and scientific attainments, and, by the wise social organisation of the college, trained to a level of good breeding that astonishes those who think the graces of life are a peculiarity of certain social classes. It is not an uncommon thing, for instance, to find that the midshipman who, quite naturally, takes the lead in young society, is the son of some thrifty mechanic, of very humble station indeed. The truth of the matter is that the *professional* impress is far stronger than the family impress. In the early days there is much to be gained by being first on the register. A keen competition is set up, which loses nothing of its zest from the fact that the private origins of the contestants are so dissimilar.

The weakness of the American Navy is that once a lad is entered a midshipman, all further promotion is by seniority only. In our own Navy, there is accelerated promotion from midshipman to lieutenant for those who pass brilliant examinations. But from the Lieutenant-commander's lists to Commander, and from Commander to Captain, promotion is by selection only. After that, seniority becomes the rule.

In America there are no facilities for

promoting promising officers young. All have to retire at the age of sixty-two. The admirals' and captains' lists are small. There are few unemployed, but no one reaches the captains' list till late, and no one stays in it long. Men may still be commanders at an age when many British officers are rear admirals, lieutenant-commanders at the age of our senior captains, and there are many lieutenants older than our junior captains. The system is a thoroughly bad one, because it means that the senior officers have exceedingly little experience of command. A man may become captain, get his flag, and retire in a third of the period during which an English officer stays on the captains' list. It also means that the senior commanders and lieutenant-commanders have to be a long time unemployed before getting commands as captains.

It is possibly another defect in the American system that there is less specialisation. Every capital ship in the British Navy carries specialist officers for gunnery, torpedoes, and navigation. These officers have been sent, as young lieutenants, to the navigation, gunnery, or torpedo establishments for courses of one or two years, and when qualified, serve the remainder of their time before becoming commanders, in charge of the activities of their departments. This system results in the production of a numerous class of experts, with the highest qualification in their particular line. From these specialists are chosen the experts who man the training establishments, ordnance departments, &c., and their existence guarantees a high standard of scientific mastery of these subjects—an asset which would be invaluable to any Board of Admiralty that chose to embark upon the innovation of letting expert opinion govern its policy in expert matters. In the American Navy all officers receive more or less the same training. When a ship is commissioned, the duties of looking after special branches are assigned to particular officers, who master the problems of their task as best they can. It is probable that the *general* resourcefulness is rather increased by this system, but it also follows that the *highest expertise* is lacking. Finally, the officers, as a whole, get far less sea experience than do our own.

THE ENLISTED MEN.

On the other hand, no naval officers in the world exceed Americans in general keenness, in the thoroughness of their mastery in the scientific side of their profession. The American officer has one constant task before him, which is a liberal education both in the understanding and the management of men. The personnel—blue-jackets, stokers, &c.—is enlisted for short terms. It is seldom that a newly-commissioned ship puts to sea with more than a very small proportion of ratings who know much about their business. There is, of course, an established list of warrant officers. But for the most part the commissioning of the ship means a long and arduous task of converting landmen into seamen, and not only landmen, but men who have not the elementary conceptions either of what the sea is like or of what discipline means. But, in spite of these difficulties, experienced American officers who know the inner working, both of the British and of other navies, will tell you that after eight or nine months' training an American crew, though extraordinarily heterogeneous in its origin, shakes down into a very efficient ship's company. For one thing, everyone who is there is a volunteer. He is bound for that commission only. He has joined for the sake of seeing something of the world, to try a new life, to have a taste of adventure. The pay is good, the food excellent, and the discipline, though effective, is not burdensome. Three things contribute to make this system succeed. The first is the thorough understanding of the American officer of the American enlisted man. The next is a certain keenness to master technical problems, which is a national characteristic. Lastly, public opinion demands that anyone who undertakes a job shall, in the slang of the day, "make good." The enlisted man is turned into a good sailor because he is at least as anxious to become one as the officer is anxious to make him so.

The weakest feature of the U.S. Navy is the supreme command and the organisation for war—subjects I propose to discuss at a later date.

A GLIMPSE OF WAR. THE GROUSER.

By W. L. GEORGE.

THE sergeant, who was inspecting the trench with an air of suspicion, stopped by the side of Private Langley. His dubious thumb and finger felt for the edge of the cottage door which, covered with turf, formed the roof of the trench. It gave a little to his hand, menacingly so :

"That's shaky," he said, "get a couple of props and shore it up."

Private Langley scowled and the sergeant, who knew his ways, smiled: "It'll be down on your head in half a tick if you don't."

Private Bradden, who stood next to Langley, was tickled.

"Shall I fetch them props for you?" he asked. "Nice little job, ain't it?"

Private Langley's face assumed an air in which was too much gloom for anger to creep in. Speaking to himself rather than to Bradden, he began in the uncertain twilight

to shore up the roof with a slanting prop. As he worked he talked:

"Just like 'im, nosin' about seein' if 'e can't find some damage. Call this soldjering? It's more like jail, that's what it is, except that in jail you do get a bit o' quiet now and then, and you know when you're comin' out o' jug, which you don't 'ere." The prop, which was wet, slipped through his hands. He pulled it up again; "What am I doin' 'ere? That's what I want t' know. What's the good of it? I arsk you—what's the good of it?"

"I don't know," said Private Bradden.

"Didn't expect you would," said Private Langley.

"Then what d'you arsk me for?" said Private Bradden nastily.

"To expose your gen'ral ignorance," said Private Langley, with increasing gloom.

The prop slipped again, and the roof irritably subsided on the top of his head; he put it back patiently. He

drove into the wall of the trench a little board into which he cut a notch. Then with infinite care, having set the base of the prop in the notch, he once more shored up the roof which he still bore upon the top of his head like a despondent Atlas, and, as he so did, remarked:

"I didn't ort t' be 'ere, I ort t' be in Stourton, that's where I ort t' be, 'avin' a 'ot bath."

"That's what we all say about you," remarked a distant voice. Private Langley could find nothing to reply to this insult and went on steadily muttering under his breath.

When at last the roof was fixed and Private Langley, who had no illusions left, waited for it to subside again under shrapnel, a rumour reached him.

"D'you know what Sergeant says?" Bradden remarked. "He says we're going to cut the wire-entanglements to-night. You know, crawl out on the q.t. while they're not looking. They're going to call for volunteers to do the job."

"Oh, are they?" said Private Langley with deliberation. "Well, I know one man who won't go." (Life to him was so grave that he never swore.) "What do they take me for? I ain't a plumber, 'tain't my job; wire-cutting's obsolesete."

"Good word, obsolesete," said the ironic and anonymous voice further down.

"Wire didn't ort t' be cut," Private Langley went on, "it ort t' be brort down with explosive shell. An' if there ain't no shell, it's an engineer's job, that's what it is, and any'ow it ain't my job, and I ain't goin'; too scratchy fer me, an' they say the groun's full of titanik germs."

An officer walked along the trench. The men watched him excitedly. He was a popular lieutenant, rather bluff, very familiar, and as he had been wounded four times was obviously destined to be hanged.

"Well, boys, we're going to have a little picnic in the barbed wire. There's room for ten, don't all talk at once! You, Bradden? one. And Jones? two. And—yes, three, four. Good! Denny, too? That's five, six, seven. What? Is that all? You too?" he said to the voice further down. "Eight and, I can't see your face, that's nine."

There was a pause.

"Put me down, sir," said Langley darkly.

He was crawling in the absolute blackness of a moonless night, slowly, so that not even a little stone should rumble under him. He panted forward, face upon the ground, painfully dragging himself along with hooked fingers and gripping toes. He was faintly aware of Bradden upon his left, of other men almost noiseless near by. It seemed a very long way to the entanglement, and, as he went quiet as some velvety weasel, he thought:

"Can't even talk. Stick a man in the mud on his stomach and don't even give 'im a chance to express 'is feelings. Call that a life!" He removed a large stone which suddenly chucked him under the chin. "It's a dirty country; where it ain't too soft, it's too 'ard." He rubbed the place on his chin and crawled on.

It seemed endless, for they went so slowly, and it was so difficult to keep a straight line; sometimes he drew too near to Bradden and then thought:

"Look at 'im, can't even errol straight; it ain't a man, it's a crab." Then a wire-cutter, which was slung across his shoulders, stuck one of its handles in his ear. He shifted the ear: "Great, lumping thing," he thought. "I'd do it with my pocket-knife, I would, if it weren't against regulations." And then, as he crawled on, he was filled with venom at the thought of the King's regulations.

It was very silent out there by the entanglements. He could just see them, their posts blacker than the night, and the strands of barbed wire, with the spirals loose in the middle, shining a little in the dark. Like ghosts round him, the other men, flat upon the ground as he, unobserved made the tiniest little clicks as they snipped wire after wire. The Germans did not know; there was no firing, except that now and then came a bullet sent on the chance from the German trench towards the anywhere. Stolidly, one by one he cut the wires. The manual work soothed him, and he could not think while he had the pleasure of feeling the metal grow soft and part in the wire-cutter. The enemy seemed unsuspecting, yet they fired a little more often; a bullet buried itself behind him. He nearly exclaimed, for another bullet had grazed his left hand; he felt the sting on it. It was nothing, of course, for it had not even taken off the skin. But as Private Langley methodically went on cutting he thought:

"Them Germans! Them blighters! Firing at you on the chance without knowing if yer there ain't playin' the game. When I want to 'it a man I pick 'im out. They give me the fair sick, they do." And as he went on cutting,

he elaborated in his mind increasingly horrible tortures to which he would subject the Kaiser when he caught him.

Suddenly Private Langley dropped his wire-cutter, and, half-blind, fumbled for it in the loose soil. He was struggling; it was horrible, for he could hardly open his eyes, so blinded was he with light. He turned his head away, only to see his hand violently white under the searchlight. Head down to keep his eyes away from the bluish ray, he fumbled for his wire-cutter, struggling, exposed, as if knocked down by this violent light, half-dazed, like a moth against an electric bulb. Every now and then he glimpsed the men near him; they, too, violently lit up as they hugged the soil. He saw them as he had never seen them before, every detail of their faces—wrinkles, new expressions—in this light so much more brutal than the sun's. He was all instinct as he struggled so, and he did not think of the bullets which were now pocking the ground all about him with a soft, wet sound. He was light-mad and conscious only of one desire—to find a darkness which even his lowered eyelids could not give him. The bluish light seemed to pierce right through to his brain. He heard cries through the firing, for there was no reason for silence now. A burst of shrapnel a little way off, and then above the din the whistling that recalled his party. With animal suppleness he turned, trying to sink himself into the soil as he crawled. He could see the British trench as the searchlight touched it, like a long hutch with a black pole.

Then he heard his name called. He stopped.

"What's up?" he shouted.

"Hit in the leg! Give us a lift." It was Bradden's voice.

Langley said: "'It in the leg, are you? Serve you right! What d'you want to wave yer leg about for?"

"Oh, hold yer jaw!" Bradden roared.

"That's what I'll do," said Langley, with great dignity. "Some fellers are arskin' for it. What did you lift yer leg for? To scratch yer 'ead? An' 'ow am I t' git there? Where are you? Not that I'm comin'; it ain't my job. Not fer me to bring in th' wounded; I'll tell the R.A.M.C.—that's all I can do for you. It ain't fair; I ain't no odd-jobs man."

The eight men of the party who had regained the trench watched the entanglement. Under the searchlight it shone like frosted silver. The officer stared into his periscope.

"We seem to have lost two, sir," said the sergeant.

They were all very watchful in the trench. They could now see in the middle of the entanglement a motionless figure, black in the blue rays. That was one of them. Then a little quiver of excitement went along the line, for they saw a movement in the wires as if something at the edge of the entanglement were struggling with them, pushing them away, something that, crawling over the sharp spikes, worked its way along the ground towards the wounded man. They gasped; it was impossible. But, no; it was true. There grovelled a man unhurt: he looked like a black snake worming its way under the full glare of the blue light, through steady firing that somehow spared him. They could see the bullets now and then strike the posts which had carried the entanglement, sometimes a few inches from the man's head.

And still he went on, somehow unscathed, but uncertain as if blinded by the light that was heavy as metal. They saw him as if in full sunlight seize the wounded man's shoulders and draw him along the ground through the cut wires, and on, and still on, under the searchlight that followed him like a malignant eye, and yet still on through the storm of bullets that struck to the right and left, and magically spared him and his charge.

They nearly fell into the trench, rescuer and rescued; their clothes torn to rags by the wires, their faces soiled with earth and sweat.

"Well done, Langley!" said the officer. "That's Bradden you brought in, isn't it?"

"Yes, sir," said Langley, and sat down exhausted. But he leaped up and remarked, as he felt his trousers, "Of course I picked the wettest place; they can't even drain their trenches properly." He addressed the half company in general: "What d'you think I'm up to? Taking the cold-water cure, or what? Tell you what; this ain't fightin'. It ain't a man's job—arskin' 'im to wallow about in the mud like a bloomin' buffalo. Tell you what, I'm goin' to buy myself out; that's what I'm goin' to do."

Two days later Private Langley was informed that he would be recommended for the V.C. Some weeks later, after the investiture, he stood on the steps of the depot at Stourton, a halfpenny picture paper in his hand. It related briefly what it called the greatest deed of bravery of the war; also it printed his photograph. Private Langley gazed at that photograph with growing fury and deepening gloom. He was wondering whether he could sue the editor for libel.

MR. BELLOC'S BOOK ON THE WAR.

By PROFESSOR SECCOMBE.

(Professor of English, R.M.C., Sandhurst.)

THE present war has at last elicited a tract of English prose comparable in many respects to some of the books evoked by the great war of a hundred years ago. National and racial contrasts, military history, topography and road-faring—these are Mr. Belloc's subjects; he has not many subjects really, but within the range of them he is versatile, his grip is sure, and his vision subtle and penetrating. How people do love the impossible! (Do not the proprietors of our weekly illustrated papers thrive on this fact?) They love to think that this unique war has produced a miraculous author. Long before the war, after a strenuous apprenticeship, Mr. Belloc had shown himself one of the greatest masters of English idiom, whether in prose or metre, that our country has ever produced. Like a well known comedian, whose son one has been grieved to notice among the long roll of the wounded, he may well say, "I was quite as good, perhaps better, for years before they found me out."

Envy, hatred, and all uncharitableness in regard to Sir Edward Grey, I more than suspect, precluded one section from perceiving what it was specially to their own and to the general interest that they should perceive, namely—that class interest was not going to transcend nationality; and, secondly, that some form of service insurance (the only reliable form) was becoming general everywhere. Instead of noticing this they buried their heads and sought to nourish democratic jealousy of the aristocratic talent for war. Some of the politicians realised, but failed to communicate, the danger. They provoked the Kaiser's risibility by sending to Berlin to learn how to organise our army "a lawyer, a man who could not ride." When he got back he had little choice but to acquiesce in the sentiment that the Germans would hardly be so unreasonable as to anticipate the next election and one or two absolutely indispensable domestic alterations.

To return to Mr. Belloc. In the first part of his book he envisages the general or historical causes of the war in a manner which will command almost universal assent. He interprets Germany's challenge convincingly. The data are not new. Well-informed people had them at their fingers' ends five years ago. Is it the atmosphere of the island that makes us so myopic and retards the action of our historians and publicists—cogent only *after* the event? Now, here is the German brief. "Sad accidents, into which we need not enter here, retarded our growth to nationhood. France, a nation healthier formerly than now, but still of much baser stock than our own, has played the leading part in Western Europe up to 1815; then came England, a Teutonic country really, over-capitalised like France, with her vast overseas Empire, possessing a far greater hold over the modern world than her real strength warrants. Even the Slavs profited by our disunion to generate power and endanger our Culture, which, it need hardly be said, is by far the highest Culture of all. Fifty years since our statesmen achieved that unrealised dream of centuries—German unity—defeating in the most fundamental fashion the French whom the rest of Europe then conceived to be the chief military power." It will do less than justice to the author to continue the brief in any but his own words:

"From that moment [1870] we have incontestably stood in the sight of all as the strongest people in the world, and yet because other and lesser nations had the start of us, our actual International position, our foreign possessions, the security that should be due to so supreme an achievement, did not correspond to our real strength and abilities. England had vast dependencies, and had staked out the unoccupied world as her colonies. France, though decadent, was a menace to our peace upon the West. We could have achieved the thorough conquest and dismemberment of France at any time in the last forty years, and yet during the whole of that time France was adding to her foreign possessions, while we were obtaining nothing. The barbarous Russians were increasing constantly in numbers, and somewhat perfecting their insufficient military machine without any interference from us, grave as was the menace from them upon our Eastern frontier.

"It was evident that such a state of things could not endure. A nation so united and so immensely strong could not remain in a position of artificial inferiority. The whole equilibrium of Europe was unstable through this contrast between what Germany might be and what she was, and a

struggle to make her what she might be from what she was could not be avoided.

"Germany must, in fulfilment of a duty to herself, obtain colonial possessions at the expense of France, obtain both colonial possessions and sea-power at the expense of England, and put an end by campaigns, perhaps defensive, but at any rate vigorous, to the menace of Slav barbarism upon the East."

To this luminous challenge England responds: "Unless we are all-powerful at sea our very existence is imperilled (and if we do not stand up to this what will our children say and think of us?): if you ask whether we will allow any part of our colonies or dependencies to become German the answer is in the negative." France observes: "We are by no means convinced as to our decadence, corruption, and the rest; but, if you ask will we submit to you as masters and leave Alsace at your mercy, the answer is in the negative." Russia protests: "We cannot help being numerically the stronger; we are not proposing to reduce ourselves, thank you; we are not really so very barbaric, and, if you persist in asking us to relinquish the Slav hegemony and leave our co-racials and co-religionists in the lurch, the answer is in the negative."

So there is a real antagonism, no doubt. Was an appeal feasible to anything mightier than the sword? The lawyer and trader States were inclined to say "Yes." But Germany said "No," and, in spite of all the peace-pipe-smokers in the world, Germany was right.

The precision of Mr. Belloc in regard to this particular war has been proved up to the hilt over and over again. He has used the divining rod before in relation to politics and other domestic affairs, and his diagnostic has nearly always been proved sound. LAND AND WATER is not the first paper of which he has been the weekly oracle. But he has not always used discretion—generally, indeed, preferring valour—and he has not foreseen smooth things; and when he has disclosed things, they have not always been things agreeable for powerful people to hear. It is little use telling plain people unpleasant things; they are not gradually and insensibly prepared to hear—the shock of novelty may easily be too much for them. But he would go on anticipating history, as he does in this book, and would never abandon his own stride to please either the demagogues or their political paymasters. He was, in fact, a prophet without honour, until the outbreak of the war put such a premium upon information such as he (almost alone among laymen who could give expression to their knowledge) possessed that he became *un homme nécessaire*, an oracle that no man could afford to ignore. He has certainly tempered strength with mercy and used his power with moderation. The grasp, the proportion, the *justesse* of his work as a war-guide and chronicler has been appreciated at home and abroad, by English and French readers. At the time of the fall of Namur he was, perhaps, the one un-uniformed man in this country who realised the full gravity of the situation. Happily, he never gave way to despair; his weekly appreciations have given comfort to thousands of half-despairing souls, whereby he has rendered a service to this nation that neither of two generations can ever possibly forget.

After giving the immediate occasion of the war—the obstacle offered by Serbia to the German policy of the three B's (Berlin, Byzantium, Bagdad), the author goes on (pp. 80-315) to illustrate, upon lines familiar to readers of LAND AND WATER, the resources of the belligerents and the values of the forces opposed. Then in Part III. (316-377), he describes the first shock, down to September 5 last. But the surprise of the book comes in the last few pages, where, in a passage characterised by superb historical vision, deep conviction, and emotional energy, Mr. Belloc deploys forces that only an historian and a prose-master, who is also a poet, can ever dispose of. In this passage he describes not the causes or questions in dispute, but the issues fundamentally at stake. There is no room to do justice to the beauty and insight of this peroration here and now, but it raises questions of such deep import that, with the permission of the editor, I must revert to it next week.

A GENERAL SKETCH OF THE EUROPEAN WAR. The First Phase.—
By Hilaire Belloc. Nelson, 6s.

TALES OF THE UNTAMED.

MARGOT (continued).

Adapted from the French by Douglas English.

THE lamplight dazed and blinded her, transpierced the triple curtains of her eyes, whose thin translucent inner lids betrayed the fear behind them.

The lamplight filled her brain with nightmare horrors, tossed sleep on swirls and eddyings of unrest, mocked at her waking helplessness. By fitful turns, she dozed, and woke, and dozed again.

At last came darkness, and she slept profoundly, and dreamt of forest lullabies, the night-songs of the sisterhood, the surr and rustle of green leaves.

Her mind had no sense of contingencies; no instinct counselled wakefulness, lest she should miss some loophole of escape.

She woke with daybreak in a silent house; watched the slow birth of form from formless shade; took stock of things inanimate, on floor and wall and ceiling. Man's lair had this in common with her forest. It sheltered moving things and motionless—and moving things alone were to be feared. So by slow reasoning worked her mind—a lifeless room was harmless.

On this, her first long curious inquiry, a lingering fear intruded. It left her as she ate. As though the forest still was round about her, not caring why, nor caring whence they came, she gulped the food-scrapes littered in her prison. She pecked indifferently at seeds she knew, at tempting morsels which were unfamiliar, at sugar, cake-scrapes, biscuits, which some strange chance had garnered in the cage.

She found drink ready also. A pannikin of water, stagnant, luke, on which a floating dust-film scrawled a spiral.

She crouched and stretched her neck to meet its level, spread wide her beak, and gulped; then, with closed mouth and eyes upturned in ecstasy, gazed heavenward as she swallowed.

So had she quaffed the forest springs and puddles on the wayside.

With thirst and hunger slaked her hopes revived. Perhaps these noisy humans yet might spare her. Were they so terrible indeed? At least they brought her food and drink in plenty. Was it some trap? Some scheme to capture her afresh?

Without cocks crew, dogs barked. She hastened to devour the last small scraps, for fear they might be snatched from her.

She knew dogs well enough—noisy, four-footed, shaggy-plumaged things, who, in their maddest, wildest course, kept muzzle close to ground. They were no foes to winged folk.

She feared the voice of Chanticleer far more; this, close at hand, was strange, and so disquieting.

But other sounds swept both these voices from her; the growl, the heavy tread of Man behind the party wall.

And presently Man entered, boisterous, menacing.

For Margot he was simply Man—the counterfeit of him who captured her. Even with lapse of time, when she knew every patron of the tavern, she could not mark with certainty the one who had laid hands on her the first and tugged her from her rival and borne her from the frosted field to the hot, smoke-grimed kitchen.

She eyed him cross-ways, curious, defiant, with beak agape and half-curved claw. He paid small heed to her effrontery. He saw the food had gone and laughed. And laughter grated harsh on Margot's ears. The feathers bristled on her neck, her beaded eye grew rounder, brighter, fiercer.

The Man brought further store of grain, and tit-bits, which he forced between the wires.

And Margot, with wide-sundered, flapping wings, backed, beak in rest, against her farther wall.

The Man set to his work, plied busy broom. He flung side-glances at the cage to note if she was tempted by the food. But Margot sulked. The dust-clouds surged and settled. They puzzled her, but riddle more profound lay in the Man's quiet eyes.

She thought herself the object of his toiling, and sought, by scrutiny of his acts and gestures, to learn how they concerned herself.

The problem seemed alternative.

Either the Man would kill her or would loose her.

His movements must be peaceable or hostile. There was no third solution. Imprisonment was unimaginable.

Her present case was transitory, impermanent—a rest, a halting-station on the road which led to death or liberty. But there was ground for hopefulness. The Man would surely loose her. He had not tried to capture her. He brought her food—food which her forest sisters sought in vain. What use was freedom if one starved?

The door flung open, and the Woman entered.

Her mind once more swung dubious.

What marked this uncouth monster from its mate? Its size? Its form? Its plumage?

There seemed no sure distinction. Was one less dangerous than the other?

Hearing and scent inclined her to the Woman. No reek of shag exhaled from her. Her voice, for all its harshness, was gentler than the Man's. It had a bird-note ring in it. The children met with kindlier recognition.

Their heads were barely table-high. She need not thrust and stretch her neck to follow their bright eyes.

She had no fear lest they should fall and crush her.

So stood, at first, her knowledge of the household.

The children prattled round her cage, thrust tit-bits in between the bars, cajoled her with endearments.

She listened with her head aslant, half-frightened, half-coquettish.

Sometimes she pecked the food-scrapes, and merry laughter rippled out, and made her pause dumbfounded. But no one tried to harm her.

Man came and went throughout the day, lolled on the benches, swilled his drink, and sang and laughed and gossiped. He left her unmolested.

She soon gained confidence in those she knew.

By evening she took scraps of food from grimy, toil-stained fingers. She tasted them and dropped them, for she had crammed her full. Some fell into the drinking-trough. Some she disposed in corners of her cage, a cage-born instinct guiding her, an insurmountable distrust.

Days passed in slow accustomment to Man.

She soon knew all the inmates of the house, the adults by their voices, the children by their height. She gave to each a different meed of confidence. She trusted more to manners than appearance. She liked the Girl the best, the Woman next. The Boy's wild mischief scared her, the Man's gruff voice, and, worse than this, the stench of smoke which oozed from every pore of him.

It brought to mind the powder smell, and dripping, clotting blood.

She counted always on escape. Youth's sanguine voice forbade despair, and hope found new-born energy in fierce discordant longings. Hourly she pecked and rattled at the bars. Hourly she read, in trivial happenings, a message of deliverance.

A single thought obsessed her mind, a passionate instinct fevered her, and lent her sprightliness and voice.

Her gaolers misconstrued the change, thought that this gaiety was real, that she was reconciled to fate, that she would settle down.

So danger grew from want of understanding and hastened the inevitable end.

A storm from westward swept across the snow, and flung a driving rain at it, and smirched its virgin whiteness.

This way and that the muddying thaw trailed zig-zag down the plough, like toper who has foundered in the ditch, and plants unsteady feet to save himself.

It drove mankind to shelter—and to boredom.

The leaden sky was matched by leaden faces. Margot alone was lively. She danced and clacked, and so compelled attention.

And, suddenly, her prison door was opened.

Was this her chance? She leapt towards the gap. A hand outspread itself and barred the way. Five crooking fingers groped for her, five monstrous fleshy fingers. They forced her backwards, pinned her to the bars. Screaming, she drove at them with beak and claw. They fixed, like eagle's talons, round her body, gripped breast and back, and tightened like a girth. The trough capsized and drenched her, head to tail. The cage tipped, dropped away from her.

(To be continued.)

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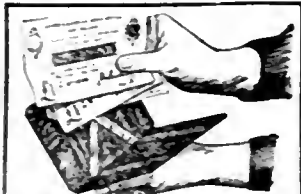
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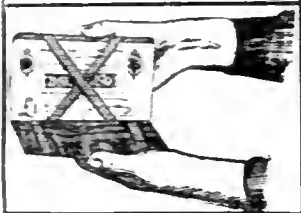
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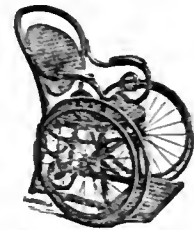
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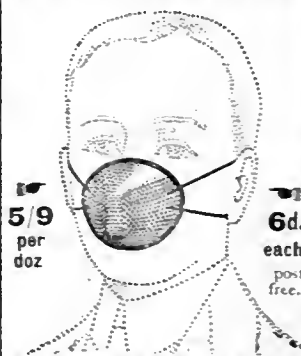
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"I AM leading the simple life," said an erstwhile Frivolous Being in hackneyed phrase the other day. "I like it, and it likes me, and I will never lead any other as long as I live." People's ideas of simplicity are as widely removed as the Poles, but the Frivolous Being's notion of simplicity unravelled itself, after some while, into a shortening of dinner, and a lengthening of day. A domestic crisis from all accounts precipitated the first, and the difficulty of spending the night anywhere but in bed the second. No longer do these fine June mornings witness a return from rout and ball and a seeking of bed with the clear rays of daylight stealing into the room. No longer is an after noon rising not only a necessity, but a logical consequence.

This latest convert to the simple life finds she is ready to leave her bed at an hour when formerly she was fast asleep, and is delighted with the experience. Otherwise to all intents and purposes she is the same Frivolous Being still. One of the few who remain. The fact that she has a husband ensconced in the safest of safe shore billets, and nobody fighting of any moment to her helps to keep her so. That, and a remarkably unimaginative disposition into the bargain. This simplifying of life, however, by no manner of means begins and ends where she is concerned. We are all doing it. Some from choice and others from necessity. It is becoming the most regular of rules, and cannot but become more marked as time proceeds.

The Simple Facts

Facts are simple enough things in all conscience, and it is with facts we are confronted now. In consequence life has automatically become a more simple thing. The complicated existence most people were leading this time twelve months back has been simply obliterated. It is as if it never were. It is with realities we are dealing, not with chimera. It has been brought home to numbers that the countless little petty annoyances, which in days gone past had such power to irritate now do not matter. They are dwarfed in the sight of far greater issues. No longer do we spend our days going here, there, and everywhere, passing from one engagement to another, few of which ever mattered a jot. Our lives have undoubtedly been straightened out and simplified. A purpose has been supplied to many people who never knew the meaning of the word before. It is indeed one of the saving clauses of the times that everything everyone is doing is on behalf of some particular object, and the aim as a rule is clear and definite.

Then again, everybody's outlets are narrowed and simplified. The richest man in the world has perforce to acknowledge the many things his money will not buy. No longer can he travel wherever his fancy takes him, many happy hunting grounds abroad are denied him, scores of things which had become a matter of course are now ruled out of being. The power of money makes no difference, they are not there to buy. So for the first time for years, to many, life has been reduced to an almost incredible simplicity. Where we are we stay, if we wander our wanderings are within a very curtailed radius, and in any case rarely prolonged. Our activities and interests revolve round very few, and those very simple matters. Everything is at last condensed.

The Old Story

Look where we will, it is the same everywhere. There is a touch of simplicity about everything people wear, everything they do, everything they say. A few minutes in the Park, in the morning alongside the Row, in the afternoon by Stan-

hope Gate, shows the truth of this. Things being as they are the Park is the main place for meeting one's fellow kind. It is depleted nevertheless, all that is bright in it rests with the flowers, and the girls who pass through in pale coloured frocks. The English girl can still be seen at her best in the Park in June. She is more attractive than ever this year, for she is simplicity personified. Elaborate dressing being voted bad taste is all in her favour. As she walks by in her cool summer dress in a flutter of pale blue, pale pink or green, she is like a breath of the peaceful past renewed. Almost, but not quite, for with her there is often a companion who wears a white cover on his dark blue cap, or is clad in khaki. Or again it is someone, who walks rather slowly with the aid of a stick or has an arm strapped to one side. Occasionally it happens that such a couple are stopped by a passer-by, and one hears sentences in which "congratulations" and "wedding," and "When is it to be?" occur. And generally the bride-to-be is heard to say "Oh no! Quite quiet" before she takes her leave. That sentence is an almost inevitable one. It sums up the present day marriage in a nutshell, it is yet another sign of the simplification we are all undergoing under the stress of circumstances.

And thus the pair pass on to the future and the quiet wedding, which will make them husband and wife. She in her pretty frock and flower-trimmed hat, he in his navy blue or khaki. The simplest of all stories is being enacted once again. Time is being found for love and marriage though nations rage and roar. There is still a moment for an idyll.

The Ultimate Hope

Then there is the simplicity of good fellowship as a power in the land. We are more willing to extend the hand of comradeship, more anxious to shoulder our brother's burden. We are already without doubt infinitely superior to the race of captious mortals, who existed but a few months ago. Our soldiers out in France have shown us the value of the helping hand. Stories have reached us of devoted attention given by men hard pressed themselves to others all but done for. A tale was told only the other day of a man looked upon as the black sheep of a regiment, rough, brutal, and insubordinate. Badly wounded himself, he nevertheless nursed a dying comrade in the ambulance waggon, "as tenderly," said my informant, "as a woman. I never could have believed the red-headed ruffian had it in him."

Poor "red-headed ruffian." He is since dead and many another like him. They have retrieved their misdeeds during life, by the great manner of their dying. They are amongst the many who are teaching us, who remain an endless lesson of courage and simplicity.

It is simple enough to go out abroad "to some place unknown," obey orders, bear the burden and heat of the day, face the uncertain morrow. Simple as many heroic things are. As far as that goes, it is a simple proceeding for us at home to help the country and its cause in every way we can, keep going, be brave, cheer and look after our men. Simple but not always easy. That is the paradox of the thing. Life, simplified though it be, does not grow any the easier. But it is infinitely better worth the living, and will be so in the future, which is all so many of us are living for or looking. We have the Hope that makes—

"Our noisy years seem moments in the being
Of the eternal Silence: truths that wake
To perish never:
Which neither listlessness, nor mad endeavour,
Nor Man nor Boy,
Nor all that is an enmity with joy,
Can utterly abolish or destroy!"

BOOKS OF THE WEEK

A LITERARY REVIEW

"The English Countryside." By Ernest C. Pulbrook. (Batsford.) 7s. 6d. net.

Mr. Pulbrook's book is assuredly a labour of love. He does not tell us in what way he explored so many villages and country towns, and the remoter hills and rivers and coasts, but we may be sure that many a time he has wandered on foot, travelling from day to day to new places, and lingering where the attraction was strong. He is familiar with foot-paths; he knows the charm of ancient inns; he has traced rivers from their moorland origins to their outlets on the sea. He has covered indeed a large subject, for England is a big place for the man who travels on foot, who dallies for hours in some inland creek or by the parapet of an old bridge, for whom each new field and village is a fresh adventure, who marks in his memory each stile, each stone-cross, and village green. He has not attempted to take one locality after another, exhausting each. In that way he might have filled a hundred volumes. And yet, in generalising, he is aware that the charm of England lies in its infinite variety; that the flats of the Fenland are not the flats of Somerset; that the hills of Derbyshire are not the hills of Surrey; that the Severn and the Thames, incomparable rivers both, are extraordinarily different.

He has started from the coast of England, playing on the topic of its many varieties and its history, thence he has pursued "quiet creeks," and lakes, to the "running waters" of rivers and streams. He considers in turn fords, bridges, fields, sheep-pastures, foot-paths, by-roads, villages, towns, inns, and wayside houses, and discourses on the seasons. He makes the transition from generality to detail with skill. If it is fair to mention faults in a book so pleasing as this, we should say that he too often bids us "pause and admire," that the wonder and sweetness of the country are too seldom appreciated in silence. It is a book which, gentle and genuine and intimate as it is, will charm those who know their countryside, and should tell much to those who, living abroad, know it rather through literature and hearsay. The illustrations are a particularly attractive feature. They are mostly from photographs which show characteristic landscapes—woodland, field, river, hill and coast—and they are excellently reproduced.

"Napoleon in Exile: St. Helena (1815-1821)." By Norwood Young. Illustrated. (Stanley Paul.) 2 vols. 32s. net.

It might have been supposed that there was no more to be said about those last dismal years in which Napoleon dragged out a mean existence in St. Helena. They have attracted the attention of many eminent historians, including our own Lord Rosebery; but there is no longer much ground for serious controversy. Forsyth vindicated the reputation of Sir Hudson Lowe more than sixty years ago, and Mr. Norwood Young, after ransacking the reports in the Record Office, and examining the contemporary evidence of diaries, letters, and reports of the Foreign Commissioners, makes the case for Napoleon worse rather than better. He has collected every anecdote, every shred of evidence that any reasonable person interested in the decaying prodigy can ever want; he has visited the island of St. Helena, spent five weeks at Longwood, and prepared elaborate plans of the island and of Napoleon's house. He has drawn largely upon the collections of Mr. A. M. Broadley and others who have enabled him to reproduce prints and caricatures. Here then is the whole of that "last phase," with every little detail set down laboriously and without ornament; Napoleon playing reversi and cheating at cards; shutting himself up in his room and giving himself airs when visited by the Governor; making his attendants stand till they were ready to drop, or revolt; plotting through O'Meara or any other wretch who would lend himself to futile conspiracy; drawing out elaborate lists of petty complaints; dictating his letters and losing his temper; stewing for hours in a hot bath; making himself troublesome and ridiculous to everyone. In the later years of his Empire Napoleon had demeaned himself by monstrous vanities and follies; but the man-of-action dominated the peacock in him. At the end it was the peacock only that remained.

"The Germans and Africa." By Evans Lewin. With Introduction by Rt. Hon. Earl Grey. (Cassell.) 10s. 6d. net.

The question of the German colonies in South Africa is one which deserves more attention than it has yet received. Sir Harry Johnston has urged the necessity of stripping Germany of her African Colonies; Mr. Arnold Toynbee has urged the contrary. Mr. Evans Lewin propounds no policy. He gives us the facts. He describes the founding of the German colonial system in Africa and the "diplomatic and sometimes peculiar processes by which it was constantly enlarged." He insists that the Germans have failed in their native policy, because they have adhered to the "mailed fist methods and sledge-hammer proceedings of the military," and because their colonial officials have not attempted to understand or sympathise with the people. The results have been incessant revolts, bloodshed, and a depletion of the native labour reserves. On the other hand Herr Dernburg has infused a new energy into Germany colonial policy which has led to a revival of their South African trade. "Less money has been spent upon the trappings of officialdom: more money has been devoted to providing avenues of trade." An important point to bear in mind is this: "Unlike the British

The Next War

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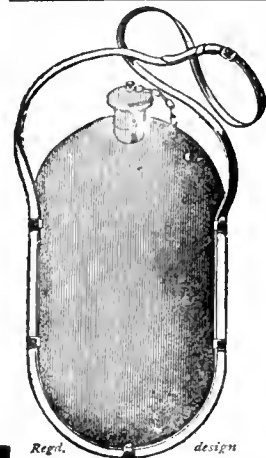
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OF CERTAIN GARDENS

By J. D. SYMON

IF the subject seem inappropriate to these days of strife, defence may be found in the reflection that it was in a garden that strife began, when a serpent vain of his *Kultur*, talked of "science over all," and found a listener. But the old story may rest for the moment—enough of its consequences elsewhere—the garden, even with the sword at the gate, remains true to its immemorial fascinations, and this year, either by some unwonted and compensating lavishness of summer or by some trick of minds disturbed, it seems doubly delightful and precious. Its spell is not to be denied amid the clash of arms. We are told that in the very trenches, our soldiers are making the wilderness to blossom as the rose; and one recalls from the earlier days of battle a snatch of verse written by an officer on the Aisne, in praise of a garden he knew and loved by the bridge-head of Venizel. No fragment of our recent war-poetry rings more true, none carries with it a more poignant note of contrast. In time of war, laws may be silent, but the gardener's gentle legislation still flourishes and becomes vocal in the poet's song.

Perhaps the most magical gardens of all are those we shall never enter. The known enclosures are sweet enough, but they always fall just one degree short of the unknown. The variety, if not the fragrance of the known can be exhausted, the unknown are inexhaustible, perennial in their wonder and surprise. They need not be great and stately, the walled sanctuaries of noble houses, it is enough that they be of some age and somewhat retired. London is rich in these retreats, even in her districts accounted less favoured. As the train whirls you through unpromising suburbs, there are continual glimpses, at the most unlikely corners, of well-tended little oases. A gap between unlovely lines of brick will suddenly reveal a cloud of bloom, as thrilling as Wordsworth's sudden vision of the daffodils, but far less enduring. For in a moment it is gone, a memory only. Next time you pass, the distinguishing flower, cherry, or plum or May, will have fallen; you cannot recognise your garden any more. Next year perhaps, with luck, you may find the place again, if you are not absent your paper. For that garden's sake, it were well to read them from publicity awhile.

Others less hopelessly inaccessible, are inaccessible all the same. Although one may come very near them, year in and year out, they hover always on the verge of the unknown, or rather the imperfectly known. Such are those of a little country town, still unspoiled in its quaint irregularity. It is the very irregularity of its plan (or lack of plan), that makes its gardens so happily mysterious. To one who has not a single acquaintance there, they must remain perpetual mysteries. That is, mysteries in the sum of their charm. They reveal themselves in part at odd corners, they push some of their clustering beauties over the edge of mellow-toned old walls, their ancient trees break the red line of gabled roofs with fine masses of contrast, especially at sunset, when the greens are olive-deep and the reds a tawny gold; but still the paradise withholds itself. Try what coigns of vantage you will, climb this little height or that, for the town leans against a hill-side, and try for a better view, the gardens keep their secret. You can only guess their perfection, but you know it is there; for generations, ay, centuries sometimes, have gone to its making.

Your new garden is hardly worth the name, except for what it holds of promise. That the gardener may never enjoy, but to-day he toils with better heart, for his work has become a symbol of the times. It is the hour when men have learned to sow gladly for others to reap. And on the scarred soil of Flanders they drive their trenches and water them with blood that the tree of Liberty may come to new strength and beauty. That, in effect, is the burden of "La Brabançonne." But let us cry the reader's mercy for this digression. Truce, it would seem, is impossible, even with the gentlest of themes. It is part of the bargain of these papers that they keep the echoes of war remote, and we are conscious of lamentable failure hitherto. Yet the essay, although it be only, as here, an essay of sorts, is permitted to digress down any alley that offers, and the best of gardens are those where the walks and alleys take the least expected twists and turns. Thereby, with good patience, the wanderer may gain some new glimpses, no matter if they be, as a wicked wit said of Jowett's philosophy, "glimpses into the obvious." Whereby, it would seem, we have regained at length the thread of our discourse.

For the next division of the subject, now deviously reached, was to have been the praise of another pleasant trick of un-

known gardens. Such are those that lie close to the highway, but are jealously screened from the highwayman's sight by high walls. Yet they are not quite obdurate in their reserve, for they concede a single point to the inquisitive. Therein they are happily distinguished from their fellows who add to the blankness of their guardian wall the added blankness of a closely boarded door, that last touch of the inhospitable. But the kind I have in mind are kinder and greater in their merit, for they permit some little glimpses of their treasure through a fair and graceful gate of old wrought iron. Much they may not give, but their little is a thing of price. The path is, at the best, narrow and of irregular paving stones, or, almost as good, of smooth brick, worn, it may be, into occasional hollows by feet of many generations. If the gate be a postern, and not an entrance of greater or less ceremony, such a path may even be of velvet turf, the most pleasing of all paths to eye and foot, although the gardener dislikes it and will tell you it is the breeding-place of slugs.

But the brick or paved approach lends perhaps a finer accent to the skirting flowers. It goes best with lines of standard roses, backed by a high hedge of sweet peas on either hand. And it is of the essence of such vistas that they be self-contained. To right or left they should not give away the further secrets of the ground, but lead the eye right onwards to an indefinite end, or if definite, let it be but a suggestion of the house which is the heart of the sanctuary.

That is good, but better still if the path ends in a maze of flower and foliage, the shimmering intricacies of the pergola, where the Rambler twines luxuriant. Or the path may widen for an instant, before it loses itself into a little circular space centring on a lichened sundial. You can never go close enough, stranger that you are, to read the warning motto on that silent chronicler, but you may before you pass on try to imagine it, or if you are in the mood invent one for yourself. Try as you will you will never better that suggested by D'Annunzio for a friend's sundial. *Me lumen, vos umbra regit.*

Putting aside the tempting morality of that epigram, which is its own best exposition, let us by way of relief turn from the ordered sweetness of formal gardens to another kind, equally pleasant in its way, but charming also in its admired disorder, the garden of childhood. Stevenson understood it well, when with deft implication he called his most delicious medley of lyrics "A Child's Garden of Verses." The child's garden is the medley in *excelsis*. No matter how the little gardener toils, the result is always haphazard, here a tuft of London Pride, there of pansies, and always the pathetic failure of the attempt to trace a name in marjoram or cress. The story books of another day had a beautiful fable that told how on George's birthday, punctual to the hour, George's name grew up clear and legible in his garden.

How many vanished springs saw small imitators of George looking in vain for the perfect lettering of the picture! But the experiment was always tried, the eternal hopefulness of youth refused to be discouraged. If not this year then next. And sometimes a few letters and parts of letters rewarded faith and patience. In the child's garden, little girls succeed best. The boy's garden is usually a joke. One recalls how that joke appeared in its most amiable form at a certain preparatory school, where prizes were given for the finest efforts. One or two plots were, by rather more than courtesy, gardens recognisable. But a passion for meretricious ornament undid the rest. Stones of every sort, even the roughest stones of the field, bits of broken bottles and shells were introduced by way of decoration, and the result resembled nothing so much as Zulu graves. And in one case, assiduous digging left little or no space for horticulture. That garden was like an abandoned field-work, torn by high-explosive shells, and so it remained when the judges came round.

Yet to give the human boy his due, ingenuity sometimes finds its account even here in unexpected ways. Once upon a time, a handy youth, fascinated by the Japanese garden at the White City, set about reproducing it in miniature. The scheme succeeded, and the arrangement of the ornamental waters did credit to a budding engineer, and showed a bent that might one day guide the choice of a profession. But in his garden the child sees far more than the blind grown up. It is a microcosm. His scale is not the scale of his elders. Here Stevenson has his word again, not of child's gardens made with hands but of natural landscape in miniature. "The very tiny dell" he found "beside a shining water well," was in itself a world. It became, was, actual and in relief, a little picture; in the original sense, an idyll.

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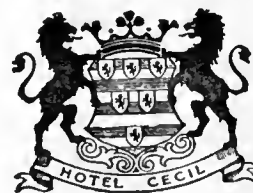
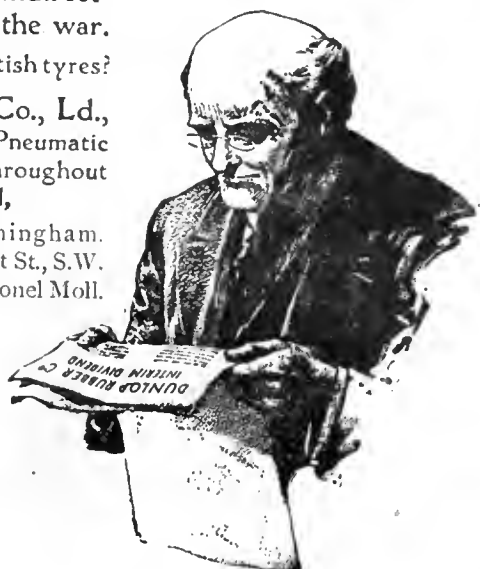
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THE WAR BY LAND.

By **HILAIRE BELLOC.**

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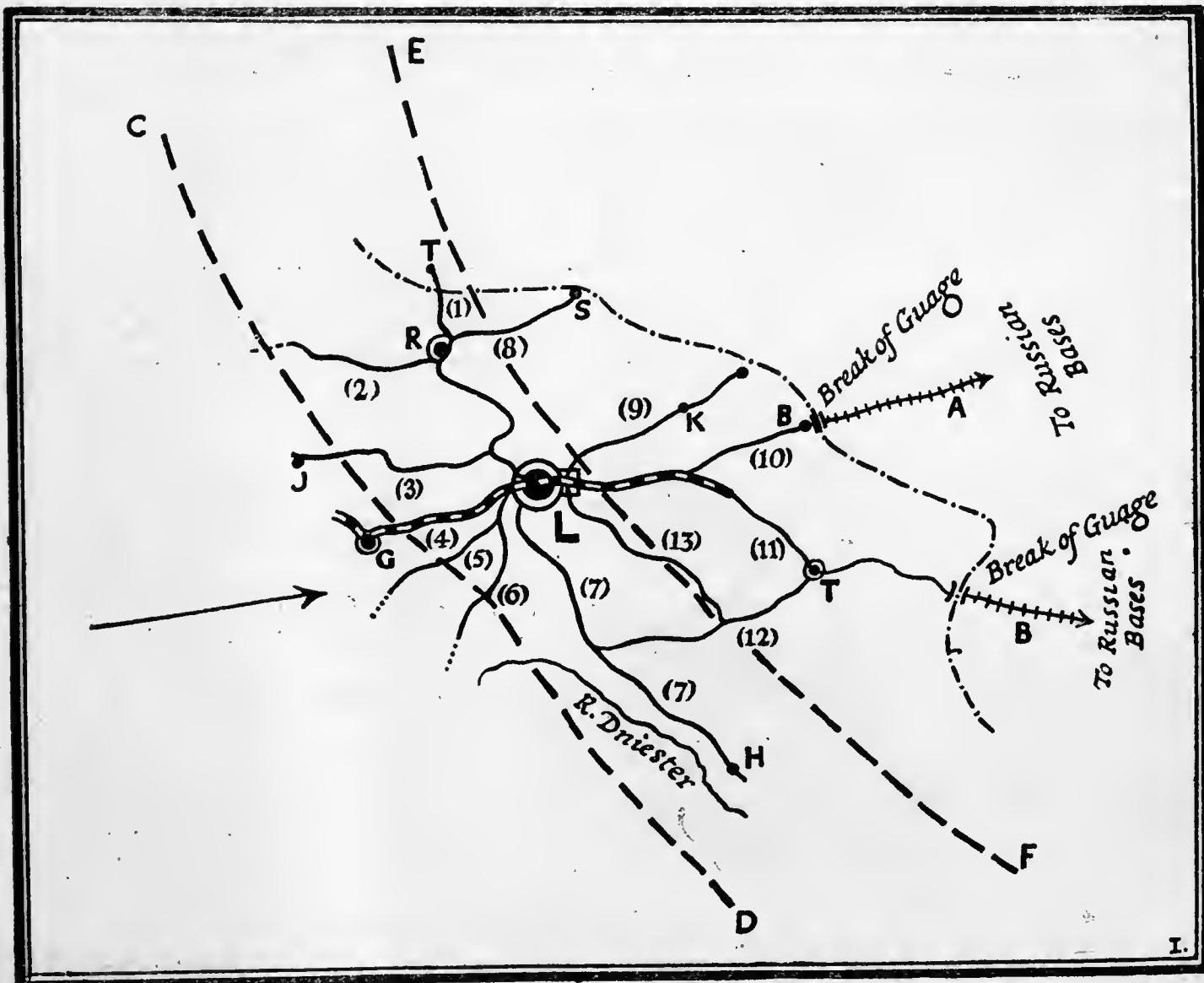
THE fighting upon the West this week, very important in its ultimate effect of wearing down the line of the enemy and proving the coming power of the as yet undeveloped offensive in the West, is not yet upon a scale, does not yet comprise movements so considerable as to permit of a general analysis. We have, perhaps, not long to wait before the West will provide all the material for these pages.

The same is true of the new Italian front, upon which in the past week no considerable change has happened, because there has been no massing as yet of the main Italian concentration. The principal material of the week is still upon the Eastern front, and concerns the fate of Lemberg.

THE BATTLE FOR LEMBERG:

The evacuation of Lemberg and the withdrawal of the Russian line behind that town must not be represented, as has rightly been every previous retirement through Galicia upon the part of our Ally, as a mere withdrawal from a geographical area. Lemberg is politically the capital of Galicia, and particularly of that sole portion of

Galicia which is partly Russian by tradition. Strategically, Lemberg is much more than this. It is the point upon which all the railways serving the Eastern section of Galicia converge. He who has Lemberg possesses the power of moving troops from north-west to south-east at will. A commander defending Lemberg from the east against an enemy advancing from the west can move troops from Tomasow (1) through the Rawa Ruska Junction, or, again, along the railway which comes into that same junction from the west (2); or, again, through the Jaworow Railway, through Lemberg itself, (3); thence southward and westward by the main line towards Grodek (4); by the next line (5), which ultimately leads to Sambor; by the next line again (6), which ultimately leads to Stryji; and by the great main lateral line (7) (it is true it is only a single one), which goes all along the defensive line of the Dniester as far as Halicz. Further, he can call in men and munitions from behind his line by the little railway to Sokal (8); by the longer one to the frontier passing through Kavionka (9); by both the great main lines from the Russian bases: that passing through Brody (10) and that coming



from Tarnopol (11); while his movement of troops is further eased by the cross line leading from Tarnopol (12) to line No. 7 and by the junction between it and the main Lemberg line (13).

One has but to look at such a diagram as the foregoing to note its position towards the frontier and to observe the fact that beyond that frontier there are only *two single lines*, A and B, connecting the Russian bases, to see what Lemberg means in a modern war conducted upon Galician soil. It is the very heart of the whole system of communications, and the passage of it from one commander to another means, after the brief delay required for the restoring of broken bridges and cut culverts, the passage of power over all communications from one side to the other. A man possessing roughly the line C—D, with Lemberg at its centre, against a thrust coming from along the arrow is, so far as communications can make him so, master of the movements required for defence back and forth. Let him lose that line C—D, and with it Lemberg, let him be compelled to fall back to the line E—F, and he has at once lost his power of lateral movement and handed that advantage over to his enemy.

That is the really great strategical importance of Lemberg which distinguishes this nodal point from all the merely geographical points hitherto acquired by the enemy in his advance through Galicia.

As against this, however, there is one matter worthy of remark. Heavy as is the blow dealt to the Russian forces by an enemy occupation of Lemberg, there does not lie behind that position any considerable opportunity for a further Austro-German advance.

How true this is a further consideration of the territory over a somewhat wider area will easily prove.

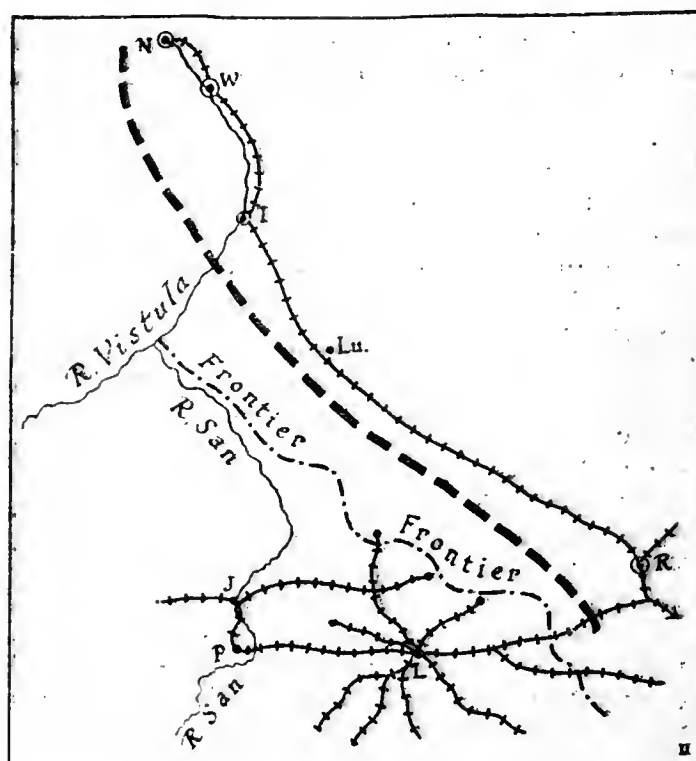
Lemberg is Galicia. But the enemy's main object must still be to break the Russian line, and that task, when or if the Russians fall back yet further behind Lemberg, is not made easier by such a success, but, on the contrary, more difficult, as will appear from the following argument:—

The Austro-German offensive against the Russian line has, as all the world knows, succeeded wholly through an immense superiority in heavy guns and the ammunition therefor. The bringing forward of munitions for these pieces, and, for that matter, the moving of the heavy pieces themselves, demanded railways. All the main advance has taken place along the great double line railway, which is the backbone of Galicia, and divorced from railways the German war machine can do nothing.

Now, while the possession of Lemberg brings the enemy a complete and concentrating system of railways for his supplies, the moment you reach the frontier of Galicia not only does that advantage disappear, but every accident of ground increases the handicap.

How true this is will appear from the annexed diagram. The frontier is here indicated by dotted lines, and it will be seen how, across that frontier, come the two main railways which lead to the Russian bases in the south and east, and converging upon Lemberg itself at L.

From Lemberg, as we have just seen, run all those subsidiary railways which have been described in the last few paragraphs, one of which



only, that to Tomasow, crosses the frontier. Now, beyond that frontier there is absolutely nothing in the way of railway communication until we get to the single line railway which, from Ivangorod, upon the Vistula (I), runs down past Lublin (Lu), and so joins up to the first of the railways to the Russian bases (1). In other words, you have all round Lemberg a sort of spider's web of railways (single lines, it is true, save the main one through Przemyśl, Grodek, and Lemberg itself) which make the movements of troops and ammunitions easy. Beyond the frontier you have nothing but this one single line from Ivangorod (I), past Lublin (Lu), to the fortified junction at Rowno (R).

Now, it is clearly evident that a force which has had to fall back from the line of the River San, and, roughly, from what we called in the first diagram the defensive position C—D to the defensive position, E—F, though it has sacrificed the immense advantages of the Galician network of railways converging on Lemberg (L), yet is retiring parallel to, and ultimately supported by, the main Russian railways coming up from the south-east, and in particular by the line through the junction of Rowno (R), past Lublin (Lu), to Ivangorod (I).

This disposition is particularly important when we remember that once the line falls back yet further, as along the line of dashes in the diagram, it is in ground full of woods and marshes and offering the greatest possible difficulties to the advance of heavy guns and their munitions. While the falling back upon this line and still further retirement, dragging with it increasingly difficult communications for the enemy—exactly like the direct communications on the Niemen six months ago—brings the Russians nearer and nearer to the railway which can supply them along a line almost exactly parallel with their front.

And the matter is further to be examined in the light of the position of Warsaw. It has been sufficiently emphasised in these columns for many months past that Warsaw, with its bridges and the convergence thereupon of so many lines of railway from the interior of Russia, is the capital strategic point (for Russia upon the defensive) of

the whole Eastern front, just as Cracow is the capital strategic point (for the Austro-Germans on the defensive) of the whole Eastern front.

Russia, advancing, could only test the success of her offensive by the taking or passing of Cracow. She failed. The Austrians and Germans, advancing, can only test their real success—their power to prevent Russia from quickly coming back—by their hold upon Warsaw.

If the Austro-Germans could so turn the line of the Vistula that their capture of Warsaw could at last be accomplished, then, although they should not have broken the Russian line, but should only have pushed it back beyond Warsaw, they would have done something almost as decisive as the breaking of that line. But the pushing back of the Russian forces from Galicia *does not uncover Warsaw*.

That is the really important thing to seize. The Vistula line, as it is called, but what it is more proper to term the great fortified Vistula crossing (which is Warsaw flanked by Ivangorod on the south and Neo Georgievsk on the north), is not turned by this advance through Galicia unless, or until, the line of railway running from the fortified point Rovno, in the south, north-westward to Ivangorod, past the provincial capital of Lublin, is in the hands of the enemy. The point will be easily grasped from the diagram already given. We see in this the great nexus of railways, of which Lemberg (L) is the centre, and how the loss of Lemberg means, as we have just been describing, the loss of Galicia; but we also see beyond the frontier, once the Galician railway system is frankly abandoned, a great belt of Russian Poland absolutely denuded of railways. It is also, by the way, largely denuded of roads, and, as the summer in this Eastern corner of Europe has been as wet as it has been dry in the West, we may regard that belt of country as one over which the enemy could only advance with the greatest possible difficulty. He is depending, as we have seen, entirely upon his superior munitionment for heavy guns. That is the one asset he has. His soldiers, as soldiers, have no longer the moral value of the renewed Russian levies which come from younger men and which feel indefinitely large support behind them. His generalship has had no cause to come into play since he has had nothing to do but batter, and whether it be superior or inferior to that of the orderly Russian retreat only an opportunity for his manœuvring would show. Whether his proportion of sick is higher or lower we cannot tell. The one and the only form of superiority he certainly has—and it is decisive—is this immense numerical superiority in munitions for his heavy guns.

But he has never been able to make use of this superiority at more than a day's march from a double line of railway. There is no case in the war, even upon the Eastern front, of a German success at any appreciable distance from some good double main line. Witness the failure of the first advance against the Niemen, the failure against the Upper Dniester, the failure against the Lower San, &c. His present movement on Lemberg has been entirely dependent upon the main line through Jaroslav (J) and Przemysl (P): even in this last turning movement, he is not a day's march from that line, to the north.

Now, if he attempt to get beyond the frontier

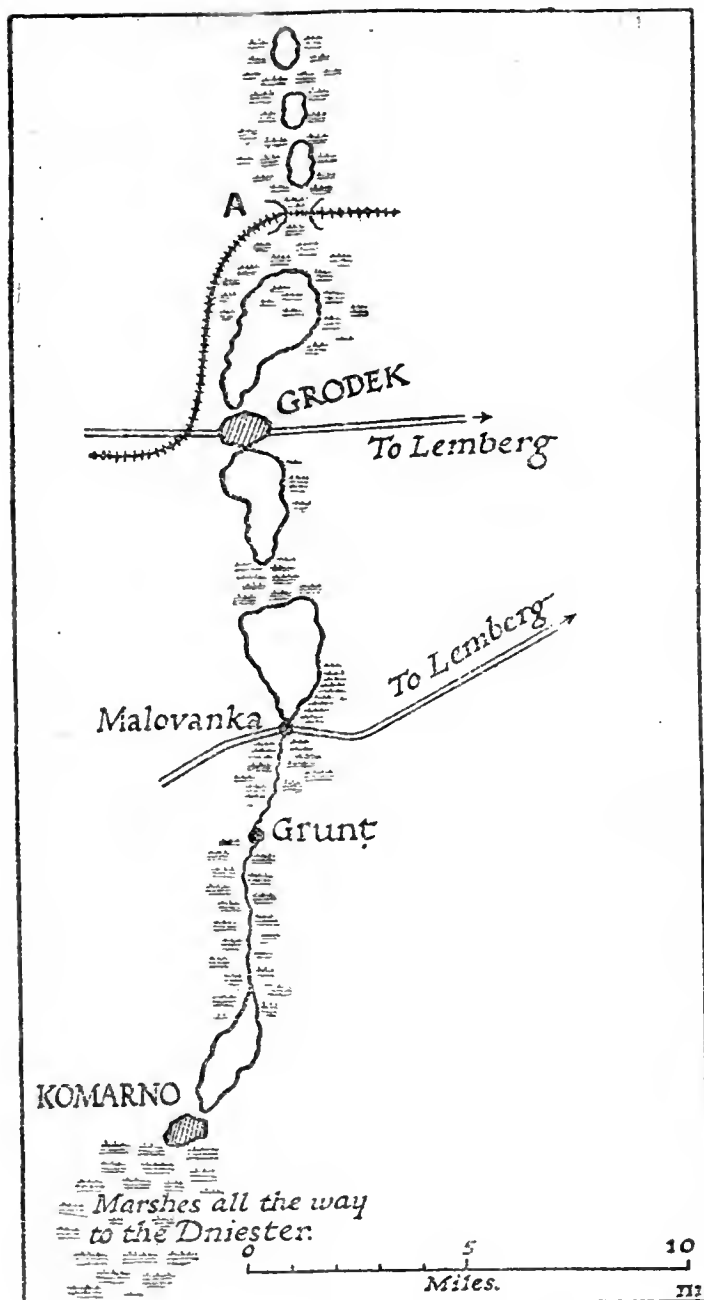
he will quite certainly find himself with every mile of his progress more and more hampered in the use of his heavy artillery, while behind the Russian front there will run the main line from the fortified junction of Rovno (R), past the provincial capital of Lublin (Lu), to the fortified point of Ivangorod (I), which flanks Warsaw (W) on the south, just as the fortified point of Neo Georgievsk flanks it on the north. It is, or should be, quite clear that such a line as, for instance, the dotted line on the foregoing diagram would give a Russian front strong against a superiority of the enemy's heavy pieces, and confidently protecting the Warsaw crossing from being turned by the south.

Meanwhile, before concluding with the details of the attack on Lemberg, one can only reiterate the obvious strategical truth, which is none the less true because it has grown wearisome, that the enemy has not effected his purpose in the East until he has separated the Russian forces and broken their line.

He has, as a political asset, by the clearing of Galicia, delayed, if it were expected, the intervention of Roumania. He has, as a material asset, got back his sources of petrol supply—a really important point. He has, for what it is worth, affected newspaper opinion, particularly, it is to be feared, in this country. But luckily the conduct of the war is in the hands not of newspaper owners, nor even of politicians, but of the great General Staff.

Now, in doing this he has already lost, for the moment, at least 600,000 men, and permanently, say, 400,000. He has also expended some very large proportion—perhaps half—of the great accumulation of shell, the "head" of shell with which he undertook the task not quite two months ago. If he does at last succeed in dividing the Russian Army and of obtaining some definite victory against it, then that exceptional expense may just have been worth while. Remember, it is still going on, and at what a rate the daily lists in our own Press of our own casualties may give us, in their much smaller proportions, some sort of idea. If he does not obtain his main strategical object, then he has made the expenditure in vain. I will deal with that point of the enemy's expense in men further in a moment. Meanwhile, let us conclude with the details of the battle for Lemberg.

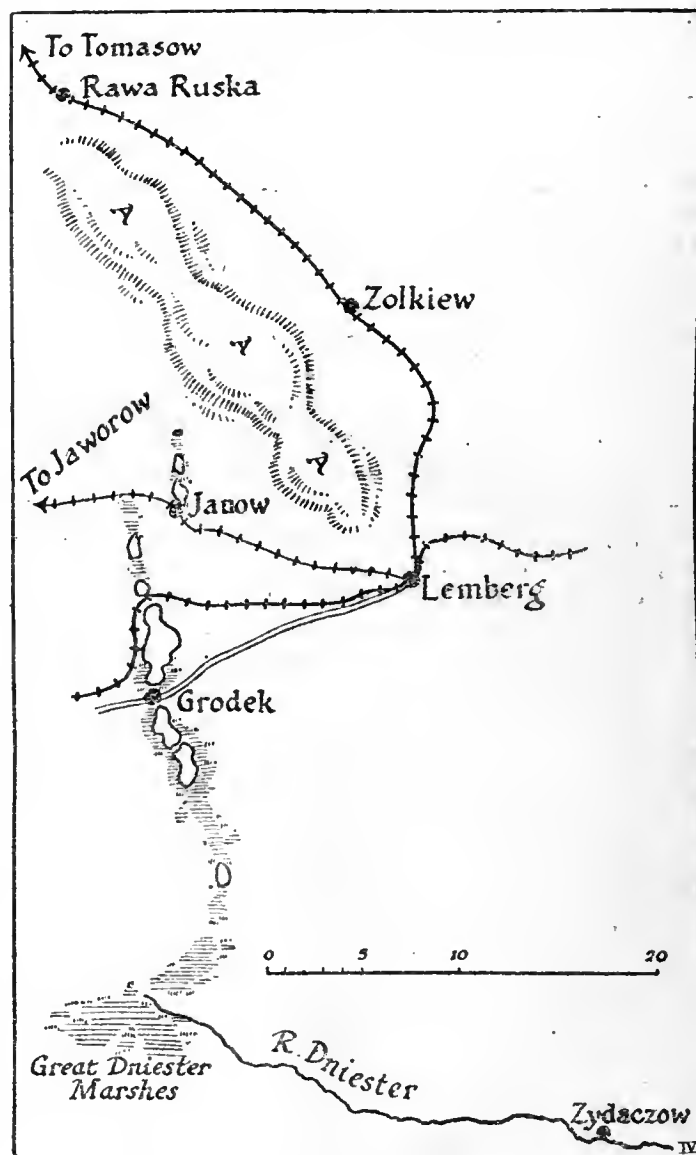
The general situation of the front defended for some days by the Russians in front of Lemberg is that expressed in the following map. There runs in front of Lemberg, rather more than fifteen miles away on the average, a long chain of lakes and marshes, generally known as the position of Grodek, from the town standing about midway in the system; the largest agglomeration of houses in that rather deserted district. This town of Grodek occupies an isthmus between two of the shallow, swampy lakes which here afford a very narrow passage of dry ground. It is this passage which carries the main road to Lemberg. The railway goes up by the north, through a similar narrow passage between two other of this chain of lakes. The whole chain of lakes and marshes from above Janow in the north to the beginning of the great Dniester marshes in the south is a matter of twenty-five miles. It is an exceedingly strong position; in fact, it is impassable to an



army attacking any properly equipped defensive. There is a passage at Komarno, then no reasonable crossing for eight miles; for at the humorously named village of Grunt, upon the drainage stream of the whole system there is only a path. It is not till you get to Malovanka that you get a very narrow bridge of dry land carrying the southern high road to Lemberg; four or five miles further to the north you have the main town of Grodek, carrying the main, or northern, high road to Lemberg; then at the top of the shallow, and largely swampy, lake of Grodek you have a place where, though the marshes are continuous (at A), the dry land comes sufficiently close on either side to carry the railway across on an artificial crossing. Beyond this the lakes extend yet another four or five miles, and at their extremity they are continued, rather to one side, by a further little chain of lakes and marshes. Here, then, is a front upon which a quarter of a million men could deploy, and yet with only three roads by very narrow defiles through the bogs and shallow lakes and only one railway for supply. It is as strong a position as any other which has come into this great campaign, and resembles in some of its difficulties the lake district where Hindenburg won his great victory of Tannenberg in the autumn of last year.

Now, unfortunately, it can be turned from

the north, where the advancing line is sufficiently strong in numbers. There runs here on the north a line of hills which I have marked A A, on the diagram below, and behind them the road from Lemberg, through Zolkiew to Rawa Ruska (and ultimately Tomasow on the frontier). Zolkiew was at the time of writing (Tuesday evening) reported by the enemy to have been in his hands since last Sunday, and therefore Rawa Ruska as well. It is evident that the whole of this northern road was already grasped by the enemy upon that date (the 20th), and that the line of the Grodek lakes was thoroughly turned. In other words, the only



natural position for the defence of Lemberg had gone.

There has not been received at the moment of writing the news of the enemy's occupation of the city.

A NOTE ON ENEMY LOSSES.

I have been approached by several correspondents in the matter of what they believe to be an exaggeration upon my part of the enemy's losses. I fear that the mood which now tends to belittle these losses is part of that uncalculating depression which has been created in this country mainly by one very insincere section of the Press, and which is as significant in the eyes of serious study and criticism as was the foolishly extravagant hope months ago, when the Russians were to have been in Berlin by October.

The calculation of enemy losses is, of course, not an exact science, but it is something in which

you can have two quite exact limits—a maximum and a minimum. I do not know how many people died in London last year, but I remember that Greater London has, roughly, six to seven millions, the death-rate, roughly, fourteen to fifteen per thousand, and I conclude that the deaths in London must be less than they would be if the death-rate were sixteen per thousand for a maximum population of seven and a half millions and less than they would be for a death-rate of twelve per thousand with a population of only six millions. I have a maximum and a minimum such that *above* the one and *below* the other I am not guessing, but am absolutely certain the figures cannot extend. The truth must be somewhere within the limits.

It is exactly the same with enemy casualties. We have not official statistics before us. The factors for our judgment are various—the enemy's own lists, our own known rate of wastage in comparison with our own average numbers, our type of fighting compared with his, the known rate at which men return to the front from hospital, the known number of prisoners.

Germany has not armed less than six million men since the beginning of the war; she has not armed more than seven and a half millions. The maximum that Austria-Hungary can add to Germany in man power is 80 per cent. She has certainly not added less than 60 per cent. The Allies hold about a million and a quarter prisoners, at the very least, but not more than a million and a half at the most. The figures of wounded and missing to dead are, even in the severest trench fighting, not lower than four to one. Of wounded admitted to hospital and of some sick about half are discharged as fit to fight again some day or other, but of wounded only you cannot count on more than a fifth getting back on the average of all services within, say, two months.

Now put all this together, and what do you find?

The average number of men in the British Expeditionary Force is not a twelfth of the numbers Germany has passed through in this war. We had less than a hundred thousand men in the field when Germany had more than thirty times as much. We have perhaps now in the field a sixth of what Germany has altogether put forward. The average is certainly, I repeat, far less than a twelfth. The German forces have been compelled, or have chosen to undertake, the most violent and prolonged offensive actions. They have fought in the most expensive tactical fashion.

Our casualties give 50,000 dead. Who can doubt that the total German dead must be over 600,000? It is absolutely certainly an underestimate; less than the lowest possible minimum. Austria-Hungary cannot conceivably have less than 60 per cent. of that total. It is certain that she has added more than 60 per cent. In other words, it is absolutely certain that your minimum of enemy dead must—absolutely without escape from the simplest laws of arithmetic—be over a million. You have certainly well over a million prisoners. Is it conceivable that disablement from wounds and prolonged sickness should be less than double the number of dead? It is inconceivable.

Well, then, the figure of four millions, so far from being an extravagant figure, is an extremely modest one. And when I said that the total number of enemy permanently out of action was "nearer four than three millions" I was putting

the figures far below even the strictest minimum. It seems to me certain that they must be over four.

THE HYPOTHESIS OF INVASION.

Current talk in the last fortnight and reports from private travellers in the enemy's country have brought again under discussion the hypothesis of invasion. It may be worth while, therefore, to consider very briefly the political and strategical position of the enemy in this connection. With the naval problem involved I cannot deal. But the general military problem is simple enough.

1. The principal military object of the enemy, in proposing an invasion of this country would be the interruption of the aid this country can afford to the general alliance. This interruption would take four forms:

(a) The retention within the island of forces that might otherwise be sent abroad.

(b) The hampering, in a greater or less degree, according to the confusion created in the public mind and in Government arrangements, of supply to the Army abroad.

(c) The same with regard to financial assistance to the Allies.

(d) The same with regard to the production of munitionment, of equipment, and of goods for export, which maintain the economic position of this country.

2. The object of such an attack would be partly attained if it could be maintained as a serious threat without ever being put into execution. Now, this truth, which is almost self-evident, is, paradoxically enough, an argument in favour of an actual attempt at invasion. For it is manifest from experience that public opinion in general in this country does not regard invasion as a serious threat, and nothing but its successful practice would have the effects just enumerated.

Therefore, those in the enemy's country who perceive the advantages which might accrue to them from the mere threat of invasion will equally be armed with arguments for its actual prosecution. In other words, we may decide immediately, that, unlike the corresponding doctrine in connection with aerial raids, the mere moral effect of a threat is not in contemplation, but either a serious attempt at invasion or none. For it is further obvious that an abortive attempt, whether resulting in the defeat of the enemy's fleet and the end of the whole business, or in the landing of a small force which should be quickly destroyed or repelled, would have a purely negative effect, and would hurt the enemy by increasing public confidence after such a success against him.

3. The argument that such an attempt would be impossible, or unlikely, on account of the drain of men it would entail holds under the immediate circumstances of the campaign, but does not hold with the same force in case of certain future possible developments. It is conceivable that during or after a period of temporary defensive upon the East as upon the West the enemy might detach a sufficient force to effect in his judgment the degree of disturbance which he regards as sufficient. We must remember here that we are dealing not with our own psychology but with the enemy's, and it is certain that he still estimates too low the power of resistance that can be offered once a landing is effected, and he rates the disturb-

ance it would create in all public plans too high.

4. The material for such an attempt is known to be prepared and has been prepared for many months, nor is it of any very complicated kind, seeing that the attempt, if made, would probably be made by an insufficient number of men.

Now, it is self-evident that no invasion could be of the least value, even as a raid, unless the sea were clear behind it for some considerable space of time. A landing force could bring with it munitions for all the earlier part of the fighting and could establish itself if it had command of the sea, whether by a trick or by a victory, for even three days. But unless that command were more or less permanent, or at any rate could extend over a calculable period of weeks rather than days, the raiders would be doomed. They could do an enormous amount of damage, and they could, perhaps, throw into confusion most of the national plans; but the effect would be slight, because it would be ephemeral, and the ultimate destruction of the force landed would be, in the field of mere moral effect, an asset of those against whom it had been directed and a permanent loss to the enemy. But if the sea were kept open for a time sufficient to permit even a mere raid to effect its purpose and to retire, then the advantage would be all in the enemy's favour.

It is to the enemy's advantage that the blow, if struck, should be struck late. He can hardly strike it until there is something of a lull in his Continental operations—until he has organised a general defensive, for the moment at least. And the later he strikes the better, because he is

staking his fleet. If he is completely defeated on land in the long run his fleet is certainly forfeit; but until he is completely defeated his fleet retains its full value. It is, for instance, at the present moment inconceivable even to his higher command that his defeat shall be so complete as to involve the surrender of his ships.

All this set of considerations tends to postpone and further to postpone any such attempt as that which we are considering.

On the other hand, the building power of Great Britain as against that of the German Empire is such that with every passing month the disproportion between the two fleets increases.

The enemy must be balanced in this scheme of invasion, between the picture of a desperate stroke which would have its maximum effect quite late in the war and a picture of a defeat which then occurring would be more thorough than what he might have suffered earlier in the campaign.

On the one hand, the enemy would at the very end of a lost campaign rather risk his fleet in a gambler's throw than see it disappear by the dull method of a shameful treaty. On the other hand, its proportionate power for offence, when we contrast the building potential of the two nations, lessens regularly as the campaign draws on.

The argument is strongly in favour of delay rather than an immediate trial. But that such an experiment, with the odds admittedly enormous against its success, may be risked as a last desperate move does actually present itself to the German commanders is probable.

A GENERAL SURVEY.

(Continued.)

I HAVE in last week's issue tabulated the enemy's view of the struggle he deliberately provoked under eight heads:

I next propose to show how his right guesses and wrong led up to the present situation.

1. The most important guess of all, the guess which was at the bottom of the enemy's grand strategy as a whole, was wildly wrong. It was as wrong as the idea the French Revolution had about the state of England and of English political opinion in the year 1793: and it was the enemy's utter miscalculation in this regard which, as much as anything else, defeated his object and forbade his final victory in the war he had provoked.

So far from the French General Staff being in peril of political confusion through the stroke which would undoubtedly menace Paris, the enemy were dealing, in the case of that Staff, with a body of men, who, more than any other in Europe, were determined to be utterly rid of the Parliamentarians the moment war began, and to sacrifice every civilian consideration whatsoever to purely military ends.

Paris did not act as a lure. The French Plan was perfectly ready to sacrifice Paris, if by that sacrifice the campaign as a whole could be won. All three contingencies, therefore, which the Germans regarded as exhaustive, and as covering the whole field of possibilities, were in reality eliminated before war began.

(a) The French Army had no intention of directing its plan to the mere defence of Paris.

(b) It thoroughly well foresaw the danger of

dividing its inferior forces, and had no intention under any stress of falling into that trap.

(c) The nation was so organised, it was so military in temper that, once hostilities had begun, no politicians, even if any had had the desire to counsel a bad military operation, would have been listened to.

The major consequences of this error in the enemy's judgment moulded the whole war. It led the enemy to drive the mass of his men straight on Paris. It compelled him, when too near the fortifications of that fortress, to swerve. He was caught in the act of swerving. The disaster he thereby suffered broke down all his provision of rapid success in the West, which was essential to his general victory.

2. In choosing the Belgian Plain as the line of an advance on Paris, the enemy was, in the military sense, justified. This line would give him ample railway communications and the most direct avenue of approach to the French Capital. In his guess as to the nature of Belgium's resistance the enemy was both right and wrong; right in the calculation which depended upon material and numerical factors, wrong, as he has always been, in what depended upon psychology. The fortresses could not resist him, the Belgian Army could but slightly and imperfectly detain him in the Field. But on the other hand he met with so vigorous a National resistance, he was so far from attaining an advance secure under a mere protest (as at Luxembourg) that all his military action from the outbreak of the war to the present day,

has been hampered by the necessity of treating Belgium as a conquered country. There are those who have excused upon purely military grounds the wholly novel and amazing procedure of massacre, pillage, rape—and worse—with which the German Authorities treated a Nation whose security they had themselves sworn to preserve. These apologists, admitting, of course, whatever *moral* blame you will in such conduct, maintain that in the purely *military* sense it has strengthened the German hands. They are quite wrong. The violation of Belgium and the policy of wholesale massacre and savagery has had three most important consequences, each adverse in their various degree to the German arms:

(a) It delayed at first by hampering communications the delivery of munitions, particularly of heavy shell at the very end of the advance on Paris;

(b) It has locked up in one way or another in Belgium not less than 100,000 men as a garrison of that unhappy country throughout the whole period of hostilities;

(c) (most important of all) *it has strategically tied the Germans through all the future of this campaign to the corpse of that Belgium which they have killed.* A reluctance or inability to retire with safety and rapidity through Belgium, a growing necessity or desire to pretend the annexation of that country leaves their grand strategy to this day clogged, they are not free to shorten their line where they will. They must

hang on in the north. Compare the effect in Central and Eastern Spain upon the Marshals of Napoleon a hundred years ago, especially when the necessity for retreat appeared.

3. In this third theory the enemy was right and the Allies were wrong. Permanent fortifications were easily dominated by the modern siege train, when that siege train and its munitionment were in sufficient force. Note that it was to the *Austrian* arsenals mainly, and to the *Austrian* engineers that the enemy here owed his power.

4. In the fourth point, the power of modern rapid road transit made good the very largest flanking movement, the enemy was wrong. Perhaps it was because the provision of sufficient artillery was impossible; but at any rate, with an enormous superiority in number, the enemy's theory of enveloping here quite broke down. I will suggest that it may perhaps have been mainly due to his error in the fifth point—the use of dense masses in attack—which is of an importance meriting longer discussion and which I will analyse next week.

H. BELLOC.

(To be continued.)

MR BELLOC'S LECTURES ON THE WAR.

Mr. Hilairo Belloc will lecture on the War at Queen's Hall on Tuesday, July 13; and Tuesday, July 27.

Seats may now be booked.

At 3.30, the Winter Gardens, Bournemouth, Monday, June 28.

At 8 o'clock, the Speech Hall, Wycombe Abbey, High Wycombe, on Wednesday, July 7.

THE WAR BY WATER.

By A. H. POLLEN.

NOTE.—This article has been submitted to the Press Bureau, which does not object to the publication as *censor* red, and takes no responsibility for the correctness of the statements.

THE NAVAL SITUATION.

THE account of the advance of the Allied forces in the Gallipoli Peninsula, published on Wednesday morning, mentions the services of the French battleship, *St. Louis*, in keeping down the fire from the forts on the Asiatic side, but it makes no mention of any co-operation of the ship's guns with the land forces in the actual advance. The fact that the *St. Louis* was engaged shows that it was not from any fear of German submarines that the battleships have abstained from participation. The probability is that the fighting took place on ground that the naval guns could not reach.

Tuesday's *Temps* announced that the Allied fleet had bombarded the town of Gallipoli, but it is not officially confirmed. It is possible that this bombardment coincided with the successful advance officially announced on Tuesday. From Gallipoli to Duhut Iskalessi, off which the ships might lie, is well within the range of 12-inch guns, and as the town occupies a great deal of ground, there is no reason why, with the assistance of aircraft, a very effective indirect bombardment should not have been carried out. There are no hills protecting Gallipoli from such fire. To the ordinary members of the public, the principal interest of both items of news lies in the fact that it is evident that Admiral de Robeck has the submarine menace well in hand.

Beyond this, the official news of naval activity from all quarters is slender. In the Baltic, a German auxiliary cruiser has held up the Swedish cruiser *Thorsten*. There is an unconfirmed report from Petrograd that the *Hamadieh* has been badly injured in an encounter with the Black Sea Fleet. Beyond this there have only been some minor events in the Adriatic. One is distinctly curious. The Italian submarine *Medusa* had the ill-luck to come to the surface in the immediate neighbourhood of an Austrian submarine that was showing her periscope only. The Austrian had time to fire a torpedo before it was itself detected, and the torpedo unfortunately proved fatal. It is almost inconceivable that one submarine could torpedo another in any other circumstances than these. It is well that this explanation has been given, for I notice that in an article in the *Nautical Magazine*, a merchant service officer holding a first mate's certificate describes how a ship he was on was submarined. He declares that the submarine fired when submerged, without her periscope being above water, and conjectures that the conning tower of the submarine was fitted with a plate-glass window, through which an observer could see to fire without using any visible optical device. If any such feat as this were possible, the submarine would be a far more formidable weapon than it is. But under water, even in the brightest light, it is not possible to see more than a very few feet, certainly not a

tenth part of the distance over which this officer had the torpedo under view that sank his ship.

There have been two small Austrian raids; one on the coast railway between Rimini and Ancona, the other at Togliamento, at the mouth of the river of that name, which is opposite Trieste, and about five-and-twenty miles away from it. In neither case were the Austrian raiding forces destroyed.

The French Admiralty has announced that the English, French, and Italian naval forces are co-operating in the Adriatic with a special view to hunting out and destroying German and Austrian submarine bases, but beyond this there is no news, either of any success by the German submarines at the Dardanelles, nor any successful raids on the Turkish communications by our submarines. There is, indeed, a story published in Rome of the successful expedition of a British submarine in the Sea of Marmara. But there has been no official allusion to it, and it is probably merely a repetition of the achievements either of E14 or of E11. There is a touch in the report of the land attacks on the Turkish positions of June 6th that is of naval interest. It seems that, amongst other captures, officers of the *Goeben* and *Breslau* were taken, together with a machine gun from the latter ship. This is a little confusing, because we know from Russian sources that the *Breslau* was engaged on June 11 with some destroyers. If any naval achievements had been looked for from either of these ships, surely neither a gun nor a man would have been removed from them.

I drew attention last week to the fact that, judging by Mr. Churchill's Dundee speech and Mr. Runciman's Parliamentary reference to the forthcoming wheat supplies from Odessa, the Ministers seem to be very optimistic about the Dardanelles. This optimism has since been strongly emphasised by the Prime Minister. On the 15th Mr. Asquith declared that he was not in the least indisposed, in due course, to explain and justify what had been done (or was being done) at the Dardanelles, but he asked the House to excuse his doing so, because such a discussion was not in the best interest of the country.

THE SUBMARINE CAMPAIGN.

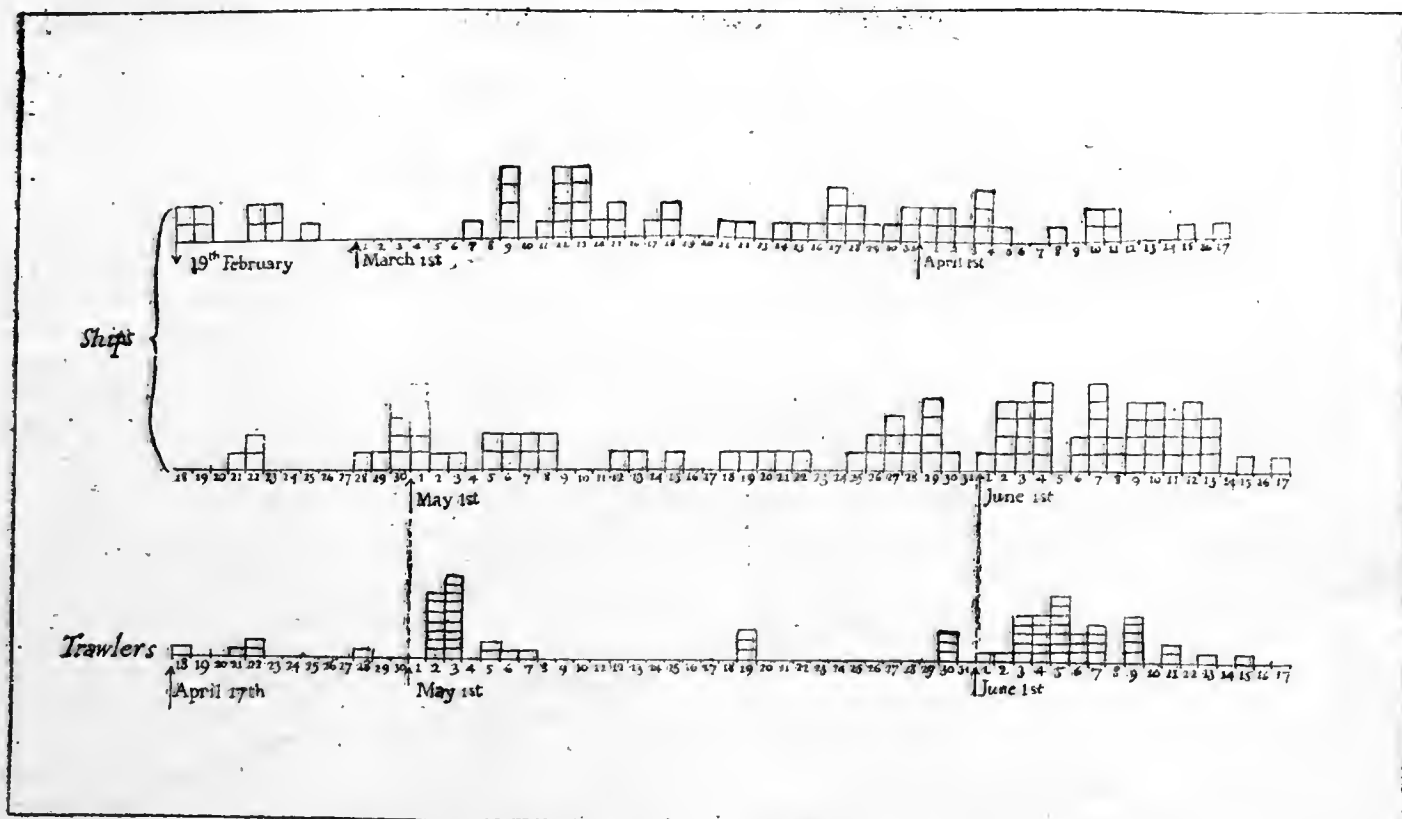
The inquiry into the loss of the *Lusitania* and the extraordinary increase in the number of submarine victims in the first two weeks of June make it worth while to examine the whole of this question a little more closely. There is, therefore, published on the opposite page a graphic statement in chronological order of the total number of submarine victims, ships and trawlers, British, Allied, and neutral, each loss being set down to its approximate date. I believe both the numbers and the dates to be substantially accurate, but it is impossible to make them absolutely so. The record includes a great many more ships than figure in the weekly return issued by the Admiralty, which is limited to British ships only, and excludes the twenty-four allied ships and thirty-seven neutrals that have been either attacked or sunk.

For this idea I am largely indebted to Mr. Chalkley, the editor of the *Motor Boat*, who was the first to draw attention to the periodicity of the submarine attacks, and to suggest an explanation.

To understand the extraordinary intensity

of the submarine attack on our merchant ships and trawlers in the first fortnight in June it is, it seems to me, necessary to bear in mind the main facts of the naval position, for it is out of these facts that this campaign arose. If Germany, possessing an inferior number of the capital ships on which command of the sea depends, had determined to make war on Great Britain, as well as on France and Russia, she would have taken two precautions. There are certain measures that she would have taken as a preliminary to making war, and she would have waited to make war until circumstances were favourable. She would have secured, if it had been possible to do so, a concentration of the naval forces available to her and to her Allies. Some excuse would have been made for bringing the three Austrian Dreadnoughts to Wilhelmshaven, for their junction with the German fleet would have made a very material difference to the relative strength of the battle squadrons. Besides this she would have seen that every cruiser she could spare was placed on the trade routes, and she would have armed every liner for which she could spare guns and men, and distributed these scientifically over the world. Having made these preliminary preparations, she would have chosen a moment for making war when the British battle fleets were scattered, so that a surprise attack of the German High Seas Fleet, reinforced by the Austrian Dreadnoughts, could have fallen upon one or more of our squadrons and annihilated every ship. A simultaneous attack would have been made upon our trading ships the world over. We should then have found ourselves suddenly involved in a naval war, with our strength in battleships reduced either to equality or below it, and with the whole command of the sea, and with it security for our trade and communications, still to win. No immediate military expedition abroad would have been possible. We should have been useless as allies.

But what the German and Austrian staffs intended in July last was not war on Great Britain, but war on Europe, with Great Britain remaining neutral. So confident were they of our neutrality that they precipitated the crisis at a moment when, as they had known for some months would be the case, the British Navy was mobilised on a scale and with a completeness entirely unprecedented in our history. It was not necessary for the Chancellor Hollweg to express his terrified incredulity when the British Ambassador in Berlin informed him that an invasion of Belgium would mean our participation in the war. It was not due to any sudden act of genius by our Admiralty. It followed inevitably from the situation. The German High Seas Fleet was instantly and for the rest of the war confined to its harbours. The fate of such cruisers as were at large, including von Spee's China squadron and the *Goeben*, was theoretically sealed. How soon they met their fate, and what mischief they would be able to do before meeting it, depended on the dispositions of the British Admiralty and the skill and determination of the various British commanders-in-chief. If the thing was badly blundered, their run might be longer. But the final issue was never in doubt. It came with the battle of the Falkland Islands. Germany then had to face the naked fact that the war found her without effective naval force and faced by an unexpected enemy on land as well.



BRITISH, ALLIED, AND NEUTRAL VESSELS SUNK BY SUBMARINES.

VON TIRPITZ v. VON HOLLWEG.

It is not at all improbable that from the very beginning of things the military staffs of Germany and Austria took the direction of national affairs entirely out of the hands of the Chancellor and Ministers. There were many indications that the political oversights which so affected the German policy were the oversights, not of the diplomats and Ministers, but of the soldiers. It seems quite certain that it was the disappointed rage of the sailors that resulted in the astonishing departure which we now know as the "submarine campaign." Von Tirpitz's threat of December became settled policy early in the New Year, and, in spite of American protests, the submarine campaign began on the appointed date in February. If we are to understand the course which this campaign has taken we must realise that it originated as a stroke of naval revenge. Its professed object was to threaten an embargo on the importation of foodstuffs into England; it was used as a lever to get us to raise our embargo on wheat entering German ports. But it must always have been obvious that it could never be an effective embargo, and it is difficult to believe that the Chancellor ever supposed that the threat would achieve a diplomatic success.

This being the position, we should expect the submarine campaign to have been in all its earlier stages tentative, the naval party pushing for the blind use of force, the statesmen urging moderation in a course that was regarded as an experiment, the effect of which was to be watched.

A superficial glance at the graphic and chronological progress of the submarine campaign seems to confirm this theory. Note, for instance, that there is a considerable pause after the first opening of the campaign in the last ten days of February. That campaign has interesting features of its own. Nine ships were attacked between February 19 and February 26, inclusive. All the attacks but two were made in the Channel between Folkestone and the Channel Islands. The

other two were made in the neighbourhood of Liverpool. From the 26th to the 7th there was a ten days' pause. Was this pause made with a view to watching the effect? There is another of four days at the end of the second week in April, and but for two attacks in the North Sea, almost a total cessation between April 18 and 28. There is a long pause of nine days after the *Lusitania* campaign.

THE PERIODICITY THEORIES.

A theory has been propounded that these pauses are due to the submarines being recalled to fill up with stores, fuel, and torpedoes. But if refitting only were in question, there would be no occasion to recall all the boats together. If a special effort had been made, as was the case with the *Lusitania*, to capture a particular ship, obviously the more submarines that were devoted to the purpose the greater the chances of success. But if it is simply a question of running amok nothing is gained by submarines working together. They cannot support each other as surface craft can do. They are exposed to less risk in proportion as they are isolated. The danger from hostile destroyers must obviously be less.

A second theory has been propounded that these long pauses are to be explained by the occasional recall either of all the boats or all except one or two, so that they could be available for the discharge of their true military duties. The primary duty of German submarines is, of course, to attack the main units of the British battle fleet. Once an attack was made on the Dardanelles those waters obviously became a field for at least some of them. The attacks on the English battle fleets in home waters have from the very beginning of the war until to-day been absolutely fruitless. But there was a secondary function—to protect their own fleet in its occasional parades in the North Sea. In going into the North Sea at all, the German Fleet undoubtedly takes risks, and it

would not take those risks unless it were guarded by mine-fields, Zeppelins, destroyers, and submarines. The mines and the submarines can be, and have undoubtedly been, disposed so that a British squadron attacking the German Fleet could be drawn into their zone as into an ambush. Whether the theory that the submarines have been called off to act in this way is true or not cannot be decided without knowledge of the dates on which the German Fleet has come out—knowledge which is not available from any public sources.

The knowledge which is available certainly lends colour to the supposition that for the first three months of the war diplomatists were holding the sailors back and limiting the activity of the submarines so as to give diplomacy a chance of using the situation which their successes had created. Two things seem to be almost conclusive on this point. First, the long pause after the sinking of the *Lusitania*; next, the unprecedented ferocity of the work carried through in the first fortnight in June. After the *Lusitania* was sunk, everything depended upon the action which America would take. Was she serious in saying that she would hold Germany to strict account? It looks as if the diplomatists had insisted upon time for these questions to answer themselves. By June it had become obvious that the American situation had become serious. An insolent reply had been sent, and had been recognised as insolent. It was obvious that German prestige must be kept up. Germany has only one prescription in this matter. The campaign must be made more frightful. Piracy and murder, then, were enlisted once more to help—or embarrass—diplomacy.

During the first ninety-seven days of the campaign ninety-five ships were attacked. In the next twenty-two days fifty-four. From something less than a rate of one ship per day, it had gone up to two and a half. High as this rate is compared with what it was, the actual ratio of ships lost to the shipping coming in and leaving British ports is still unimportant. From the point of view of an attack on the national wealth or on the national source of supplies, the campaign remains as it began—completely ineffective as a military measure. But it is worth asking ourselves if this rate will be maintained or increased. It depends upon two things—first, the political motive which may actuate to supreme direction of German policy; next, the facilities that Germany possesses for carrying on the campaign.

THE FUTURE OF THE CAMPAIGN.

On the political side, a great deal will turn upon the action of America. Nothing in the last week throws any further light upon the state of American opinion, which, on the whole, seems resolute to support the President. Mr. Bryan's efforts to create a peace party do not seem to be succeeding. The situation remains, therefore, that America would have no choice between war and the sacrifice of self-respect, so that the issue is not in doubt. Germany must either cease the campaign or be prepared to fight America as well.

Supposing she elects to fight, can she continue the submarine campaign? Can she make it more intense? Undoubtedly, it seems to me, she can do both. There is no doubt that her facilities for manufacturing submarines will increase, and not

diminish, with time. But, while this is so, certain facts are reassuring.

Practically no ship has been attacked in the Channel—that is, between east of a line from Portland to the Channel Islands and west of the Straits of Dover—since the beginning of the second week in April. In this limited area, therefore, the defensive measures taken by the Admiralty seem to have been perfectly successful. The fact that not a single transport or Channel steamer has been successfully attacked since the beginning of the war has always been eloquent of the effectiveness of the measures taken by the Admiralty in these waters. But the public might naturally suppose that these measures were limited specifically to the protection of the transports and Channel steamers and not to making a given area immune from submarine attention. Although the Channel passenger traffic and the Army transports have escaped, there was in the first seven weeks of the campaign a very heavy toll taken of ships in the eastern half of the English Channel. Indeed, the waters between a line drawn from Dover to Calais and another from Havre to Portsmouth witnessed attacks of no less than eighteen ships between February 19 and April 8. But from April 8 on this part of the Channel appears to have been perfectly clear. It is also gratifying that, except for two ships on June 12 that were sunk between Liverpool and the Isle of Man, there has been no casualty in the Irish Sea north of St. George's Channel since the second week in March.

It is, of course, obvious that precautions can be taken in narrow waters which cannot be taken where waters are more open. It will be remembered that in the earlier days of the "Blockade" the Admiralty announced that the North Channel—that is, from Fair Head to the Mull of Cantyre—was closed to all traffic. Any submarine, therefore, wishing to operate off Liverpool would have to enter by St. George's Channel, which is not fifty-three miles across, and would have to make good its exit by the same way. Similarly, the Straits of Dover were announced to be closed, so that submarines, to operate in the Channel, would have to go right round Scotland and Ireland and enter from the Atlantic. From La Hogue to Portland Bill is about the same distance as across St. George's Channel. For practical purposes, therefore, traffic between England and France and between England and Ireland is safe. But it is equally obvious that no preventive measures have succeeded generally in mitigating the operations of submarines either in the North Sea or on the West Coast of Scotland and Ireland, or in the approaches to the English and St. George's Channels.

THE NEW WAR LOAN.

The new War Loan is bound to be a success, for it appeals to every class of investor, and is founded on the highest security in the world—the British Empire. It carries interest at $4\frac{1}{2}$ per cent., and provides for optional redemption in ten, or certain redemption in twenty years. Holders of the First War Loan, of Consols, and certain Government annuities can convert their holdings into New War Loan Stock—but the soundest feature in this gigantic scheme is the opportunity it affords to the small investor to share in the great obligations which the war has imposed on the country. There can be no better or more acceptable form of thrift for the working classes, whose income has, generally speaking, increased more than that of any other class in the community, and no better employment of capital than in the supreme interest of the State.

Those who knew Mr. McKenna's financial ability were greatly pleased when he became Chancellor of the Exchequer, and the world at large will approve the statesmanlike basis of his finance at a time when England has grave need of statesmen.

SEEN AT THE FRONT.

I.—NIGHT ON THE HILL.

By a Sub.

IT was time to start. Nor had I ever so reluctantly left a squalid place. How warmly the firelight flickered on the walls and beams of that wayside farm-kitchen in Picardy! How comfortable even the filthy farmyard looked amid its enclosing lofts and byres! And the two mis-shapen rooms where we had billeted four days. Dirty they were and difficult and cavernous, yet to-night so enticing. Outside there had sprung up a little chilly evening wind. But yesterday I should have sat by the window, reading. And now there lies before us the three-mile walk to the trenches, a long night's watching, four days and four nights in the firing line.

We march off.

Into a wintry sunset. For it is the season of early spring. The road is yet muddy after recent rains. The dank fields lie cold and uninviting on either hand. Approaching the cross-roads, we quicken step, for are not they marked by the German artillery?

And of all the dreary places in all the dreary lands that I have seen I picture this group of wayside houses as the saddest. Always—except when the working parties hurry by—an unnatural stillness reigns. Roofless skeletons of houses and houses broken in a score of places; people creeping in and out, French peasants who cling pitifully to the relics of their homes; children peering out of the windows and doorways, too scared to play; heaps of ruins, and everywhere a great lonely emptiness.

We turn off into the fields. Yet the sunset is still in the sky, and it is too light to cross the open lands. We must wait. The men smoke cigarettes and fall to talking after their inconsequent fashion about the prospects of the night, also of professional football, and—their suppers. Now darkness creeps up and the sun dips beyond the grey rim of the Flanders plain. It is twilight. We move on across the ploughed field. Not a sound, not a murmur of war. Until of a sudden we are in the road again, a road congested with troops. Battalion headquarters are here, and many transport wagons unloading by the wayside. Long files of men in hoods and caps and heavy equipment, the rifle slung over the shoulder, move slowly along towards the trenches. There are orderlies on horseback, sitting their horses like statues silhouetted against the evening sky.

We crawl forward presently at snail's pace until clear of the congested trench parties, then turn off to the left down a path, following a light ammunition railway. On the one hand are overhanging trees, on the other ghastly wrecks of houses. Soon we come to the little cemetery where our comrades lie, H. T., with the unfailing laugh, and C. O., who fell in action on the night of December 19, winning his D.S.O. He was only eighteen. And many others, bearing humbler names—they rest there, amid the shell-pits and the ruined houses, under white wooden crosses. Nor can I pass by that spot, melancholy as it is, without recalling the company sergeant-major's sly humour. Never would he bring the nervous newly-joined subaltern down that way but he showed him with unction, with emphasis—and a twinkle in his eye—that little cemetery of nameless graves.

The occasional bullet "ping-ing" across our path tells us how near we are to the trenches. Some desultory rifle-fire in front gives additional warning. Soon we are in the machine-gun zone and, stooping low, we hurry along the ditch beside the white strip of road, then across an open bit of plough towards the shelter of a parapet. Suddenly a machine-gun opens. We fall flat, and the bullets whistle overhead as the devilish thing sweeps round. Then we creep along behind the parapet which leads rather steeply to a ruined barn. Here the troops in reserve are crouching over the fires they have kindled, cooking their supper. The fire casts a strange glare around. It is a place of shadows and passages and creeping armed men. The company whom we are to relieve files out of the trenches and we file in.

I place my sentries. I lay down my pack and equipment in the dug-out. Carrying only my revolver, I walk along the line of the breastwork, noting here an improvement, there a defect. Climbing the rear face of a little hill, I sit down behind the machine-gun emplacement, which is safe and a vantage-point. From there towards the enemy I can look across the plain.

I see a wide and shadowy country. The moon is rising out of the calm night. A little wind whines and whispers

among the sandbags. I see dimly a land of poplars and small trees (dwarf oaks), orchards, and plentiful willows. I see flat fields and ditches and stagnant water, and red farms whose roofs are gone, stark skeletons in the moonlight. I see broad flat spaces and then a ridge—the ridge of Aubers. Only the German lines are hidden from sight.

No sign of life. Silence and desolation reign. But here and there the faint glimmer of a fire indicates the presence of the enemy. Afar off, rockets, red and green and white, shoot up to the sky, star shells bursting above our trenches cast their baleful light around. Strange twisted figures of trees stand out against the horizon. There is no sound but an occasional home-like mating-call of partridges in the fields and the peculiar laughing cry of the little speckled owl which here, as in England, dwells amongst the orchards.

How many nights have I watched that scene from my post on the hill! And suddenly out of the long silence there have come the obscure reminders, the swift stirrings of war. The faint clink of spades away down in the trench, stertorous masculine breathing, a muttered exclamation. Sometimes a stray bullet whistled out of the darkness and went singing on its way; sometimes a party of soldiers, heavily burdened, tramped by, crouching low. Often—about the middle of the night—a machine-gun spoke with its metallic "clack-clack" or the sharp crack of a rifle came from near at hand or somewhere afar off a great gun boomed sullenly. Then silence, and I would listen intently. Only the "clink-clink, clink-clink-clink," of our own picks and shovels at work and eighty yards away the answering "thud-thud" of the German wiring parties driving in their stakes.

Then I would rise, and, creeping to the parapet of the fort, peer over, my head and body partly concealed by the machine-gun. The ground sloped sharply away to the confused region of moonlight and shadows. At first the eyes could not probe this dusky space. Yet after a few moments one found them out—fitting here and there, fetching, carrying, digging, working like little demons of men, bent figures silhouetted in the moonlight. And occasionally the non-commissioned officers could be heard cursing those grey soldiers of the Empire. There was a partial truce between us. By night we all worked at that part of the line; by day we fought desultorily.

And night by night, as I watched, the strange silent mystery of it all overwhelmed me. Now and again a rifle cracked and at intervals there came to the ear the infernal "clack-clack" of the machine-gun, than which there is no sound more terrible in war. It was on such a clear moonlit night, when a fresh wind blew to the nostrils the first scents of spring, that a man working in the midst of his fellows fell silently to the ground—dripping blood—nor ever spoke again. And thereafter I could not rest alone on the hill but the horror of such things crept over me. The interminable lines of watching men stretching away into the dim distance towards the battlefield of Ypres, where the guns boomed and the crackle of rifle-fire went on all night long—the interminable lines of watching men awaiting their chance to kill, to wound—for why? None knew, none cared. The same blood, the same God, the same humanity, the same mentality, the same love of life, the same dread of death—I did not hate then, but I pitied.

And sometimes, as I watched, there would come on the wings of the night a weird low sound of singing. Strangely it rose and fell and trembled on the wind, then died away. The solemn cadences of "The Watch on the Rhine," the triumphal pæan of the Austrian National Hymn, and often strains of wild windy music, like the sighing of pine forests—such songs as the Southern Germans love—these floated across when all else was still. And often there came the sound of a mouth-organ, cheap and bizarre, to remind me of a café chantant in Paris, or—why, I know not—of the hot midday in some London street.

Then would I make a tour of my posts and see the working parties home to bed. And time and time again, as I crossed the moonlit patches or the little plank-bridge near by, a rifle cracked close at hand and a playful bullet whistled past my head. They saw me, they waited for me; one day they would get me. Finally the dawn broke across that dreary plain more fresh, more beautiful than a woman's face. The night wind sank, the moonbeams and the shadows fled away. And, creeping into my little den, I fell asleep.

MR. BELLOC'S BOOK ON THE WAR.

II.

By THOMAS SECCOMBE.

(Professor of English, R.M.C., Sandhurst.)

THE points left over from my last week's consideration of Mr. Belloc's General Sketch of the European War were mainly two. First, his treatment of the numerical factor, and, secondly, his eloquent vision in the form of a peroration, in which he treats of the historical continuity of the German menace. Like Napoleon and most other soldiers, he is profoundly persuaded of the validity of big battalions. Ultimately all Europeans have much the same potential moral. "The most remarkable general discovery in the war has been the endurance and steadiness under loss of conscript soldiers." It had been said during the long peace that short-service conscripts would not stand up to professional or long-service soldiers. To this theory the Manchurian and Balkan campaigns gave a sufficient answer if men would only have heeded it. The present war leaves no doubt on the matter. "The short-service conscript army has in this matter done better than anything that was known in the past." No; it is left to the priest and the politician to repeat the cynical old fable about the volunteer being worth ten pressed men. Truly, as Matthew Arnold said, Britain is a country invented for the beatification of cant and claptrap—cant about "militarism," claptrap about the "volunteer." A breath of candour about our historic armies and the methods used in recruiting them would blow away for ever this cynical and enervating twaddle. When a small band of genuine volunteers from the City of London, inspired by heroic motive, went to the place of embarkation to take shipping to defend Antwerp three and a quarter centuries ago they were confronted by a crowd of sweepings from the gaols, men recruited in Falstaff's fashion. A letter from the front asking for more intimated that "our men perish like flies, but our need for more is great; see that they may be sent with dispatch, for it is urgent, and I pray thee that these be not so lousy as the last." It was the same with the "volunteers" for Blenheim, who had to be kept in hulks to prevent desertion. And what about genuine volunteers for our American wars of the eighteenth century, among the rank and file? It would need a microscope to discern them. The two most dangerous armies we have ever had, Cromwell's and Wellington's, can only be termed volunteer armies by courtesy. They were replenished by pressed men, hardly, if at all, less than was the navy. "They have given me an infamous army, by God," said the victor of Waterloo. By "they" apparently he meant the Justices of the Peace and the subsidised allies. For if it has not been the compulsion of the law that has given us our volunteers, past and present, it has assuredly been the compulsion of brute circumstance or a confidence trick based upon the most humiliating cajolery, such as the assurance tacitly given to the T.F. that Saturday afternoon soldiering would be all that God or man could conceivably demand of them. On such maxims as these, then, the revolting fallacy of which is exposed with withering acuracy in "The Green Curve" ["The Limit"], is the imposing fabric of our British Pacifism grounded and reared. We satirise the unfairness of taxation and the privileged class under the *ancien régime*, but what other nation in the world has granted the privilege of exemption from the supreme tax to all who merely take the tradesmanlike precaution of protesting against war on principle, but have never exhibited even a glimmer of aversion to grasping any conceivable profit that the chances of war may throw in their way?

The God of Blood and Iron is repulsive: agreed. But have we not cherished the peace-idol too much in our hearts for some time past? Cant against war and cant against soldiering has created an impression among presuming folk that our feet were cold and that, whatever happened, we were not "for war." Yet, as a matter of fact, we had already been in a state of war for a period considerably anterior to August, 1914. Germany had for a long time been bent upon our destruction, and from the moment that a state of war is decreed by the predominant sense of a nation it cannot end, really, until the will to war ceases mutually and by consent. This we ought to have discerned, and our Western politicians cannot easily be forgiven for the fact that they did their utmost to the last moment to keep us blindfolded. But some said, "Yet a little more sleep," while others, like the great farceur Pélissier, were convinced that the absence of a tariff wall had cut away the ground from

an invader. When the Germans penetrated the English Home in his delightful travesty they found it richly furnished and inhabited by compatriots who damned them for their pains—England was theirs already! Every object in the house was promptly turned upside down and discovered to be "made in Germany," with the exception of a Bechstein piano. . . .

The book ends with a Michelet-flight of historical synthesis recalling the fine work, unrivalled, so far as I know, that Mr. Belloc has done in books like his "Marie Antoinette," "The Girondin," and "The Eye-Witness." This war compels him to conjure up the returning again of those conflicting spirits—spirits like those in "The Dynasts"—which had been seen over the multitudes in the dust of the Rhone Valley when Marius came up from Italy and met the chaos in the North—the clash between the ancient European civilisation and the quickly growing, quickly dissolving outer mass which continually learns its lesson from civilised men and yet can never perfectly learn that lesson. They had come this time in overwhelming numerical superiority, in a flood, in a sweep that has no parallel in the monstrous things of history. . . .

"And all along the belt of that march the things that were the sacrament of civilisation had gone. Rheims was possessed, the village churches of the 'Island of France' and of Artois were ruins or desolations. The peasantry already knew the destruction of something more than such material things, the end of a certain social pact which war in Christendom had spared. They had been massacred in droves, with no purpose save that of terror; they had been netted in droves, the little children and the women with the men, into captivity. The track of the invasion was a wound struck not, as other invasions have been, at some territory or some dynasty; it was a wound right home to the heart of whatever is the West, or whatever has made our letters and our buildings and our humour between them. There was a death and an ending in it which promised no kind of reconstruction, and the fools who had wasted words for now fifty years upon some imagined excellence in the things exterior to the tradition of Europe were dumb and appalled at the sight of barbarism in action—in its last action after the divisions of Europe had permitted its meaningless triumph for so long. Were Paris entered, whether immediately or after that approaching envelopment of the armies, it would be for destruction, and all that is not replaceable in man's work would be lost to our children at the hands of men who cannot make."

There was something in them always—these Germans—of the back forest, averse to the life of the walled city. In their moods there was often something pathetic as of Calibans who aspired to lick the hands of Culture, or in sentimental mood warbled bird notes and sought to catch and tame the pretty grey squirrel of the pine woods. Their genius was in the back rather than the brain, but their diligence and their laboriousness was limitless, and they thought by intellect alone to solve the intimate riddle of the universe. Discipline, the Drill Sergeant, and the Science, which they adapted rather than created, became their gods. The neutrals, who knew them not, were dazed by the prosperity of this cult of success and forgot to ask, when they propounded their Will to Power doctrine, *The Will to Power to what?* And their idol befitted them well: Bismarck, the grand carnivore, the worst of the century after Napoleon. The man without scruple, to whom all means were good in the national lawsuit, who bent the corners of the cards when luck did not serve him ("Blessed be the hand that falsified the Ems telegram"), vindictive, cruel, insensible, jealous, already ready to invoke the Frederick tradition. "Trust me to find a *casus belli* within twenty-four hours. The sycophants of the study will always justify a *fait accompli*. Whatever is, is might." It is with the psychology of a people bred in this faith, wantonly arrogant and aggressively rude by nature, that the Spirit of the West in Europe is remorselessly at war.

After a vivid survey of the horrors of invasion by this exulting horde last September, the author is in a position to give to his *Dixerat* just a Swiftian touch of the terrible, with an added vagueness all his own. "That is the vision that should remain with those who desire to understand the future the war must breed, and that is the white heat of energy which will explain very terrible things, still masked by the future, and undreamt of here."

THOMAS SECCOMBE.

THE WAR IN THE AIR.

IS THE ZEPPELIN INVINCIBLE?

By F. A. Talbot.

THE recrudescence of a certain Zeppelin liveliness upon the Eastern coast, and the escape of the aerial invader, has once more revived the parrot-cry, "Where are our defending aeroplanes and anti-aircraft guns?" The fact that these corsairs of the skies invariably complete their fell work of distributing death and destruction without suffering any mauling in the process has created a distinct feeling of uneasiness in the minds of the more timorous, who are beginning to wonder whether, after all, the Zeppelin is not invested with extraordinary properties of invulnerability, and will be able to exercise the command of the air! As a matter of fact, it has come to be regarded in some quarters as a kind of super-dirigible, and a meed of abuse is being meted out concerning the supineness of our authorities in accepting the general opinion of this craft as a "mechanical monstrosity," and thereby underestimating its qualities.

The brilliant exploit of the late Lieutenant Warneford, V.C., in successfully sending a Zeppelin and its crew to their last account has served to revive drooping spirits to a certain degree, and has proved that the Zeppelin is no more immune from attack than any other vessel. Incidentally, it has been responsible for the inquiry as to why our defending airmen cannot do likewise.

No vessel is easier to destroy in theory than the Zeppelin, owing to its enormous bulk. The latest craft measure 525 feet in length, by some 30 feet beam, so that a huge target is offered to hostile fire. In actual practice, no airship is so difficult to put *hors de combat*, the size of the target notwithstanding. As a matter of fact, Lieutenant Warneford in his feat demonstrated the only effective means of sending these vessels to destruction—*by getting above them, and launching a bomb to ignite the gaseous charge with which the huge gas-bag is inflated*, which, owing to its pronounced lifting power, is hydrogen. Parenthetically, it may be observed that Warneford in his achievement exposed another German bluff. The vessel he destroyed was one of the latest, which, according to sedulously disseminated Teuton intelligence, was inflated with a non-inflammable gas!

From the meagre details which have been published, it is difficult to realise how Lieutenant Warneford succeeded in gaining the advantage of position—that is, a point above the airship. It appears to be a straightforward operation to race upwards through the air to gain paramount position. The average individual would lay the odds upon the aeroplane, in view of the extreme altitude to which a pilot has driven his machine, as, for instance, Hawker's record of 20,000 feet, and from the fact that the heavier-than-air machine can attain a far greater altitude than the Zeppelin, the safe limits of which are about 12,000 feet. But in "climbing," if such a term may be used, the speed advantage is with the airship. *The dimension in which the airship excels is the one in which the powers of the aeroplane fall to the minimum.* In other words, the airship is able to take the utmost advantage of the aeroplane's most pronounced weakness. The latest types of Zeppelin have an ascensional speed of 3,000 feet per minute, which is equivalent to an average of thirty-four miles an hour. The mention of the latter figure may seem superfluous, but the reason therefor I will explain later. Moreover, it moves in this plane in a direct vertical line—that is, upon an even keel. On the other hand, when the aeroplane desires to make a rapid ascent, resort must be made to "spiralling," and in this operation, although the speed may be maintained, progress in the vertical direction is relatively slow, as those who have attended an aerodrome have observed when an airman sets out deliberately to climb as fast as possible to a certain height, in order to "loop the loop."

The Germans have always recognised that the tactical position for effective attack upon a Zeppelin is directly above, and accordingly special attention has been devoted to nullify the attainment of this position as much as possible. The Zeppelins have been given as high an ascensional velocity as the structure of the metal framework will permit, and, be it noted, this maximum speed must not be approached except in instances of dire emergency, inasmuch as the vessel, when flying upwards at such a velocity, is submitted to enormous strains, which exert severe shearing stresses upon the metallic framework. All vessels are submitted to the ascensional test, and these are of sufficient severity, according to my source of information, as to cause, occasionally, severe shearing of the

bolts holding the framework together. The various girders are induced to move so seriously as to cut the heads and nuts off the rivets as cleanly as if severed by a pair of shears.

An ideal position for attacking an airship which is moving in the vertical plane is one immediately below the airship, since the guns and rifles on the latter cannot be depressed sufficiently to hit the comparatively small target offered by the heavier-than-air machine. On the other hand, the men in the latter are not particularly hampered by being forced to fire directly upwards; it is no more trying than shooting at pheasants passing overhead. So far as the men in the aeroplane are concerned, their objective, when attacking from this position, is rather the disablement of the propelling machinery and the killing of the crew than the hitting of the gasbag itself. *The latter cannot be damaged seriously by gun-fire.* The system of compartmenting, or subdividing the vessel into eighteen compartments, each of which contains a hydrogen-inflated balloon, nullifies this form of attack very completely. A bullet will merely make two punctures—one where it enters and the other where it emerges from the balloon respectively. In its flight the missile will not fire the gas. The punctures in the envelope will be so small that, although a gas leak will be precipitated, the exudation of the inflating agent will proceed so slowly as to affect the airship very slightly, and even this loss can be counterbalanced by the discharge of ballast.

On the other hand, if the machinery can be put out of action, even only partially, success is imminent. Directly the airship becomes deprived of its independent speed—that is, the speed developed by the motors, and which exceeds the velocity of the air-currents, thereby enabling the vessel to move in any direction—it reverts to the status of the ordinary balloon. It becomes the sport of the wind. Its pursuit, attack, and ultimate destruction are simplified very appreciably. It cannot dodge its pursuers because it is able to move only in one direction—that of the wind. Its position is rendered additionally precarious because, under such conditions, its immense dimensions and weight contribute to its peril. It will plunge and roll to such an extent as to set up destructive internal strains, and, if it does not break its back, it will tumble head foremost to the ground. The first Zeppelin loss in the war, which occurred in the Vosges as a result of direct attack, was attributable to the disablement of the machinery. Absolutely uncontrollable, the monster plunged finally into a forest to roll over and sprawl itself among the trees.

But if the attacking aeroplane secures command of position so that it gets immediately above the Zeppelin, the latter can scarcely hope to escape destruction, because it is exposed to the only missile which is capable of firing the hydrogen with which it is inflated—the bomb. Even in this extremity the Zeppelin has one possible avenue of escape, but it is of a desperate character. This is to take avail of its speed in the vertical plane in the reverse direction—to descend rapidly. This end can be consummated only by releasing a vast volume of gas, and must be carried out carefully so as not to disturb the dynamic equilibrium or longitudinal stability of the vessel. It must descend upon an even keel. But this final move is made in the hope of catching the aeroplane overhead napping. Fearing that his prey may escape him, the aviator, in his attempt to keep within easy distance or point-blank bomb-dropping range of his foe, may overshoot the mark and thus lose his command of position. Should this occur, the Zeppelin is arrested in its downward descent, and by hurriedly discharging objects overboard pell-mell, a sufficient reascending effort may be imparted to enable the airship to regain superior position. This was evidently the ruse which was put into execution by the commander of the Zeppelin destroyed by Lieutenant Warneford. Unfortunately for the Zeppelin the aviator kept his head, and merely descended sufficiently to make sure of his bomb.

But manœuvring under and also above a Zeppelin must be conducted with extreme caution. In flying upwards at the speed of 3,000 feet per second, a terrifying vortex is produced beneath the airship, and, if the aeroplane should be engulfed, its own destruction is certain. Some idea of the character of this vortex may be readily gathered by standing upon the platform of a railway station to watch a train passing at the speed of 34 miles an hour, which is equivalent to that of a Zeppelin ascending at 3,000 feet per minute. The

tumult behind the train is sufficient to whirl paper and other light articles in all directions, owing to the rush of the molecules of air to fill the vacuum created immediately behind the last carriage. If such an agitation and rush of air prevail behind a railway train where the over-all area is only about 10 feet in height by 6 feet in width, what must it be immediately beneath an airship travelling at identical speed, but where the surface measures 525 feet by 30 feet! It is safe to assert that no aeroplane could live within a considerable radius of the centre of disturbance; it would be drawn into the vortex.

If the aviator be immediately above the airship when a rapid descent is made by the latter, the aeroplane would be drawn downwards, and its equilibrium would be destroyed, as in the case of Lieutenant Warneford's machine.

When the vulnerability of the Zeppelin from overhead attack was first appreciated, an effort to remedy this disadvantage was made by mounting a quick-firing gun upon the top of the vessel. Trials were made with this weapon, but it was found that the recoil of the weapon caused a pronounced vibration of the structural members of the rigid framework. Accordingly, the fixed quick-firer was abandoned, although the position was preserved for the convenience of one or two members of the crew armed with magazine rifles, which it was maintained would be adequate to repel hostile attack during the period the airship was being prepared for a hurried descent. This fact is worthy of mention, because it is claimed that the gun position upon the top of the airship was abandoned owing to the danger of the flashes from the arm firing the hydrogen gas exuding from the envelopes of the balloons within, but this escape of gas is just as observable below as above the airship.

Until such time as artillery science produces a missile which will act in a similar manner to the bomb depending upon the force of gravity for its volition, and which upon striking the envelope will disrupt the latter and fire the inflammable gaseous contents, the only means of bringing a

Zeppelin down is by securing a position overhead. This fact has been appreciated by Count von Zeppelin and the German military department from the very first. But there has always been one saving factor. The aeroplane does not possess the capacity to hover; it must travel at an appreciable speed to maintain dynamic equilibrium in the air. Hurling a bomb from a rapidly moving vehicle at a definite target is one of the most difficult tasks; a miss is more likely to be recorded than a hit. The possibility of a dirigible being pitted against a dirigible is too remote to be entertained, but if one such vessel should get the position above another vessel of this type, then the fate of the under-dog is sealed. Consequently, all things considered, it was accepted in Teuton military circles that it would be an extremely difficult task for the hostile aeroplane to secure the dominating position; the possession of the speed gauge was against the enemy. The destruction of the Zeppelin in Belgium has precipitated a snarl of intense rage through Germany, not so much because the Zeppelin was destroyed, but for the plain reason that the British had discovered the tactical point of attack and had proved the vulnerability of the mechanical monstrosity when assailed from such a point. In a word, the Allies have learned the true significance of *getting above* the Zeppelin, and one may rest assured that in all future operations less effort will be expended upon the firing of rifles and machine guns in the hope of disabling the propelling machinery; the main object of attack will be to force the airship to the under position, so as to bring it within bomb range, because the bomb dropped from overhead is the only known means of consummating the complete destruction of this vessel.

To assail a Zeppelin from the ground with shrapnel, or from a point below the airship with guns mounted upon aeroplanes and firing the common type of projectile, is a waste of energy and ammunition, as I will explain in a future article.

THE AERIAL OFFENSIVE.

MR. L. BLIN DESBLEDS was the first writer to suggest a comprehensive and sustained aerial offensive as the most effective means of shortening the war.

We publish on another page a letter from Mr. H. C. Wells, who shares Mr. Desbleds's views on this important subject.

The following extracts from Mr. Desbleds's articles in LAND AND WATER are of interest at the present time:

"Without in the slightest degree criticising what has been done by our commanders, to whom the State has entrusted the task of carrying out the operations to enforce our views and those of our Allies, the writer desires to press home the point which he has already, on two occasions, brought forward in these columns—namely, that a strong, comprehensive, and sustained aerial offensive might result in a much earlier victory than would otherwise be the case."—LAND AND WATER, February 13.

"We are now, as regards military aeronautics, in possession of data which were not available when the war broke out. Some preconceived ideas concerning the value of aviation have received terrible blows and have met with a quick destruction. Unforeseen uses of the aeroplane have come into prominence. Our airmen have shown a greater valour and adaptability than even the most enthusiastic supporter of the new arm could have expected.

"A most important quality of the aeroplane has been brought to light. This quality is its value for offensive operations. . . . For offensive work, of permanent value, it is not an air fleet of a few dozen machines that is required, but one of about a thousand, or more, strong. . . .

"Now the question which presents itself is whether it would be possible for this country to build, in the space of a few months, 2,000 aeroplanes, train the men necessary to pilot them, form the necessary contingent of mechanics which would be required to accompany them at the front, and organise an adequate transport service. The writer has gone carefully into these questions, and he is convinced that, though the effort would have to be a considerable one, the formation of a powerful offensive aerial fleet, thoroughly equipped and manned, could be produced in this country in the time stated. It can, besides, be asserted that such a fleet could be brought into existence without interfering with, or hindering, in the slightest degree, the development of the

present air fleet which is so necessary to our armies for reconnaissance and kindred work. . . .

"If, therefore, the country decides to endeavour to obtain an aerial supremacy which would enable us, almost immediately, to carry the war right into the heart of the enemy's territory, a special offensive air fleet must be created at once."—LAND AND WATER, March 6, 1915.

"In her ability to produce aircraft Britain stands alone. . . . The occupation by the Germans of the highly industrial districts of Northern France . . . has reduced the industrial resources of our Ally. . . . It is upon us that the burden rests of creating such a fleet. It is a duty which we are bound to perform, since it may, without interfering with our other arrangements, lead to a much shorter war and to a smaller sacrifice of lives.

" . . . The writer estimates that the possession by the Allies of an offensive air fleet, 1,000 aeroplanes strong, and kept at this strength, would, in a very short time, render the maintenance of the German Army in the Western theatre of war a matter of extreme difficulty, if not of impossibility. Add to this the fact that with a disorganised railway traffic the enemy would be unable to transfer quickly troops from the Western to the Eastern theatre of war, and *vice versa*, and the damage which a strong offensive air fleet could do to the German arsenals, and you will come to the conclusion that a powerful air fleet could now not only prevent men, ammunition, and arms from being sent to the German front, but could also interfere with the manufacture of those arms and ammunition. . . ."—LAND AND WATER, May 8, 1915.

THE BLERIOT MANUFACTURING AIRCRAFT COMPANY.

We publish on another page the prospectus of the above company, in which £100,000 shares are offered for public subscription at par. The object of this company, which is to provide additional aeroplanes for the use of the War Office and Admiralty, is one which must meet with universal approval. It is, moreover, a need which has repeatedly been emphasised in this journal. Probably no one has done more for the cause of aviation than M. Bleriot, and fortunately for the company he combines practical ability with inventive genius. This is shown by the remarkable and increasing success which the business of M. Bleriot has achieved in the last five years, the English business alone having made nearly £40,000 profit for the twelve months ending March 31, 1915. With the addition of further capital the company is likely to make good use of the unique opportunity awaiting it.

IMAGINATION IN THE WAR.

By H. G. Wells.

To the Editor of LAND AND WATER.

DEAR SIR,—I am entirely with Mr. Blin Desbleds upon the question of a big effort to bring off a sustained aerial offensive; to anyone with any imagination it is the obvious thing for us to do now. It could be done. It could end the war and it would end it decisively. But neither our politicians nor our military authorities are prepared to attempt anything so novel. By trial and experience the Germans, after a year of warfare, are fighting exactly as any imaginative person interested in such things in 1900, say, could have told them they would have to fight. Our side is, of course, rather behind that and fighting in the fashion of 1899. If you doubt this, read what follows.* It was written in 1899 and published in 1900. It puts balloon for aeroplane, because in those days aeroplanes were too extravagant an idea for sensible people to swallow, and the whole passage is obviously "toned down" to the digestive capacity of sensible people.

The great change that is working itself out in warfare is the same change that is working itself out in the substance of the social fabric. The essential change in the social fabric, as we have analysed it, is the progressive supersession of the old broad labour base by elaborately organised mechanism, and the obsolescence of the once valid and necessary distinction of gentle and simple. In warfare, as I have already indicated, this takes the form of the progressive supersession of the horse and the private soldier—which were the living and sole engines of the old time—by machines, and the obliteration of the old distinction between leaders, who pranced in a conspicuously dangerous and encouraging way into the picturesque incidents of battle, and the led, who cheered and charged and filled the ditches and were slaughtered in a wholesale dramatic manner. The old war was a matter of long, dreary marches, great hardships of campaigning, but also of heroic conclusive moments. Long periods of campings—almost always with an outbreak of pestilence—of marchings and retreats, much crude business of feeding and forage, culminated at last, with an effect of infinite relief, in an hour or so of "battle." The battle was always a very intimate tumultuous affair, the men were flung at one another in vast, excited masses, in living fighting machines as it were, spears or bayonets flashed, one side or the other ceased to prolong the climax, and the thing was over. The beaten force crumpled as a whole, and the victors as a whole pressed upon it. Cavalry with slashing sabres marked the crowning point of victory. In the later stages of the old warfare musketry volleys were added to the physical impact of the contending regiments, and at last cannon, as a quite accessory method of breaking these masses of men. So you "gave battle" to and defeated your enemy's forces wherever encountered, and when you reached your objective in his capital the war was done. . . . The new war will probably have none of these features of the old system of fighting.

The revolution that is in progress from the old war to a new war, different in its entire nature from the old, is marked primarily by the steady progress in range and efficiency of the rifle and of the field-gun—and more particularly of the rifle. The rifle develops persistently from a clumsy implement, that any clown may learn to use in half a day, towards a very intricate mechanism, easily put out of order and easily misused, but of the most extraordinary possibilities in the hands of men of courage, character, and high intelligence. Its precision at long range has made the business of its care, loading, and aim subsidiary to the far more intricate matter of its use in relation to the contour of the ground within its reach. Even its elaboration as an instrument is probably still incomplete. One can conceive it provided in the future with cross-thread telescopic sights, the focussing of which, corrected by some ingenious use of hygroscopic material, might even find the range, and so enable it to be used with assurance up to a mile or more. It will probably also take on some of the characters of the machine-gun. It will be used either for single shots or to quiver and send a spray of almost simultaneous bullets out of a magazine evenly and certainly, over any small area the rifleman thinks advisable. It will probably be portable by one man, but there is no reason really, except the bayonet tradition, the demands of which may be met in other ways, why it should be the instrument of one sole man. It will, just as probably, be slung with its ammunition and equipment upon bicycle wheels, and be the common care of two or more associated soldiers. Equipped with such a weapon, a single couple of marksmen even, by reason of smokeless powder and carefully chosen cover, might make themselves practically invisible, and capable of surprising, stopping, and destroying a visible enemy in quite considerable numbers who blundered within a mile of them. And a series of such groups of marksmen so arranged as to cover the arrival of reliefs, provisions, and fresh ammunition from the rear, might hold out against any visible attack for an indefinite period, unless the ground they occupied was searched very ably and subtly by some sort of gun baying a range in excess of their rifle fire. If the ground they occupied were to be properly tunnelled and trenched, even that might not avail, and there would be nothing for it but to attack them by an advance under cover either of the night or of darkness caused by smoke-shells, or by the burning of cover about their position. Even then they might be deadly with magazine fire at close quarters. Save for their liability to such attacks, a few hundreds of such men could hold positions of a quite vast extent, and a few thousand might hold a frontier. Assuredly a mere handful of such men could stop the most multitudinous attack or cover the most disorderly retreat in the world, and even when some ingenious, daring, and lucky night assault had at last ejected them from a position,

dawn would simply restore to them the prospect of reconstituting in new positions their enormous advantage of defence.

Probably between contiguous nations that have mastered the art of war, instead of the pouring clouds of cavalry of the old dispensation, this will be the opening phase of the struggle, a vast duel all along the frontier between groups of skilled marksmen, continually being relieved and refreshed from the rear. For a time quite possibly there will be no definite army here or there, there will be no controllable battle, there will be no Great General in the field at all. But somewhere far in the rear the central organiser will sit at the telephonic centre of his vast front, and he will strengthen here and feed there and watch, watch perpetually the pressure, the incessant remorseless pressure that is seeking to wear down his countervailing thrust. Behind the thin firing line that is actually engaged, the country for many miles will be rapidly cleared and devoted to the business of war, big machines will be at work making second, third, and fourth lines of trenches that may be needed if presently the firing line is forced back, spreading out transverse paths for the swift lateral movement of the cyclists who will be in perpetual alertness to relieve sudden local pressures, and all along those great motor roads our first "Anticipations" sketched, there will be a vast and rapid shifting to and fro of big and very long range guns. These guns will probably be fought with the help of balloons. The latter will hang above the firing line all along the front, incessantly ascending and withdrawn; they will be continually determining the distribution of the antagonist's forces, directing the fire of continually shifting great guns upon the apparatus and supports in the rear of his fighting line, forecasting his night plans and seeking some tactical or strategic weakness in that sinewy line of battle.

It will be evident that such warfare as this inevitable precision of gun and rifle forces upon humanity will become less and less dramatic as a whole, more and more as a whole a monstrous thrust and pressure of people against people. The battalion commander will be replaced in effect by the organiser of the balloons and guns by which his few hundreds of splendid individuals will be guided and reinforced. In the place of hundreds of thousands of more or less untrained young men marching into battle, there will be thousands of sober men braced up to their highest possibilities, intensely doing their best; in the place of charging battalions, shattering impacts of squadrons and wide harvest-fields of death, there will be hundreds of little rifle battles fought up to the hilt, gallant dashes here, night surprises there, the sudden sinister faint gleam of nocturnal bayonets, brilliant guesses that will drop catastrophic shell and death over hills and forests suddenly into carelessly exposed masses of men. For eight miles on either side of the firing lines—whose fire will probably never altogether die away while the war lasts—men will live and eat and sleep under the imminence of unanticipated death. . . . Such will be the opening phase of the war that is speedily to come.

And behind the thin firing line on either side a vast multitude of people will be at work; indeed, the whole mass of the efficient in the State will have to be at work, and most of them will be simply at the same work or similar work to that done in peace time—only now as combatants upon the lines of communication. The organised staffs of the big road managements, now become a part of the military scheme, will be deporting women and children and feeble people and bringing up supplies and supports; the doctors will be dropping from their civil duties into pre-appointed official places, directing the feeding and treatment of the shifting masses of people and guarding the valuable manhood of the fighting apparatus most sedulously from disease; the engineers will be entrenching and bringing up a vast variety of complicated and ingenious apparatus designed to surprise and inconvenience the enemy in novel ways; the dealers in food and clothing, the manufacturers of all sorts of necessary stuff, will be converted by the mere declaration of war into public servants; a practical realisation of socialistic conceptions will quite inevitably be forced upon the fighting State. The State that has not incorporated with its fighting organisation all its able-bodied manhood and all its material substance, its roads, vehicles, engines, foundries, and all its resources of food and clothing; the State which at the outbreak of war has to bargain with railway and shipping companies, replace experienced station-masters by inexperienced officers, and haggle against alien interests for every sort of supply, will be at an overwhelming disadvantage against a State which has emerged from the social confusion of the present time, got rid of every vestige of our present distinction between official and governed, and organised every element in its being.

I imagine that in this ideal war as compared with the war of to-day, there will be a very considerable restriction of the rights of the non-combatants. . . .

If the things that were obvious to imaginative people in 1900 are only taken up slowly and reluctantly by practical people in 1915, what earthly good is it for any one of imagination to put his faculty at such problems at all? If our people will not deal with imagination they must work out things in toil and bloodshed. Our people are not going to attempt an aerial offensive at the suggestion of Mr. Blin Desbleds; they will never attempt it until the Germans have tried it and made successes with it. Then and then only will it appeal to them as a rational proposition.—Very sincerely yours,

H. G. WELLS.

* A quotation from "Anticipations," by H. G. Wells, published in 1900.

THE COLLAPSE OF FORTIFICATION.

By COLONEL F. N. MAUDE, C.B.

ONE of the great surprises this war has brought to the uninitiated is the sudden and complete collapse of the many fortresses on which both money and intellect have been lavished in Belgium, France, and Austria.

To the lay mind there is something majestic in the frowning masses of masonry which normally form the characteristics of all permanent fortifications, and it needs an effort of imagination to realise that these imposing features have so completely lost their defensive value in face of modern artillery and high explosive shells that at present only those fortresses still hold out in which the defenders have succeeded, by means of hastily-constructed field entrenchments, in keeping the enemy out of range of their actual walls. No one, however, notices that by so doing they have in fact given away the whole case for expenditure in peace on permanent works, by increasing enormously the numbers of men required to defend the nucleus which the permanent works were designed originally to protect.

The object of surrounding a certain town or junction point of many communications (the two ideas are generally identical) with permanent defences has always been, primarily, to enable the few to dispute its possession against the many. If £100,000 spent on great walls and ditches made it possible for, say, two battalions of men to resist as long as ten could have done without their support, its expenditure was economically justifiable, because the interest and depreciation of the capital sum sunk in such works was very much less than the pay of the eight thousand men or so which would have been needed to defend an unprotected position. Not thirty years ago we still applied this reasoning to the problems of defence arising in our coal-mining stations and Colonial ports, and essentially the same idea underlay the construction of the Belgian, as, indeed, of all other defences.

But already the writing was on the wall for those to read who had knowledge enough to perceive its interpretation. The history of the evolution of warfare showed that the ratio between the cost of construction and the cost of the garrison which could be served by sinking capital in fixed defences had been steadily falling ever since the invention of gunpowder as a propulsive agent. With every yard gained by the artillery in range we were approximating to a point where the advantage of the defence would vanish and the attack would finally secure the upper hand.

In other words, it became clear that a time was coming when it would pay better to spend all money available from the nation's revenues on the maintenance of mobile armies which could carry war into the enemy's country rather than on unproductive works intended to resist aggression.

The coming of the high explosive shell settled the question. As a nation the Germans were the first to understand what its arrival must mean. Seeing that the time was near at hand when no amount of masonry, or armour plating, or even deep earthwork trenches confined to a fixed position could avail against the destructive power of the shells that could be brought against them, they began to abandon the construction of new forts or fortresses and spent all moneys they could obtain for engineer services on the construction of roads and railways within their frontiers by which guns heavy enough to destroy in a few hours the defensive works they knew existed in their possible enemy's country could be brought into action at the earliest moment possible. In so doing they solved one of the most important problems in national economy—namely, substituting productive investment of capital for the unproductive sinking of huge funds on which both interest and depreciation had to be paid, for their strategic railways belonged to the State, as did the commercial network of those already existing that acted as feeders to the main lines, besides developing the districts which they traversed, and thus becoming paying propositions themselves in their turn. Substantially, though not quite so thoroughly, we have pursued the same policy in India for the last twenty-five years without finding a scientific explanation for our practice.

It is thanks to this far-seeing policy that the Germans have been able to develop the enormous power of aggression and resistance which has so long held the Allies at bay. They have substituted everywhere the *idea of men instead of stone walls*, and but for the immense disproportion in numbers of

troops and resources which the Allies are by degrees developing against them (a disproportion which never came anywhere within their calculations), they might well have succeeded in their dream of world conquest. They only did not allow for their adversaries' possible equation. Fortunately, neither the Russians nor the French were quite unprepared for what has happened, and both have adopted a policy adapted each to the special topographical conditions of their respective frontiers, policies which discount to the utmost the advantages their superior preparations had conferred upon the Germans.

Had we succeeded in penetrating the enemy's territory at an early period of the campaign we should have found ourselves confronted by all the disadvantages that a want of mobility entails, for the Germans, whilst keeping all their own lines, would have destroyed everything as they retreated, and we should have had difficulties to contend against which now they are encountering in their raids into Poland and Galicia.

Now, the fighting power of an army is never to be arrived at by counting heads alone, but is always a product of many factors, the chief of which are numbers and mobility. Thus in South Africa, because the Boers could at need cover twelve miles in an hour against our four—or average thirty miles in a day as against our ten—we had to maintain in round numbers about nine British soldiers in the field for each mounted Boer. Hence if we had invaded Germany whilst she was still in possession of, say, four million men capable of moving twice as fast as ours by means of her strategic railways, we should have required somewhere about sixteen millions of men to complete her overthrow.

Since, however, and viewing the problem in bulk, we could not destroy her power of mobility without invasion, there was nothing left for us to do but to *compel her to destroy her own numerical superiority by fruitless attacks* which in the nature of things could never succeed. This well explains the long delay that has occurred in bringing her to decisive action.

We have had to suit our methods of warfare to the different topographical conditions of each frontier and to employ diplomacy as well to ensure her response to our call. In the West, having checked her invasion, the rapidly acquired ascendancy of our aircraft has been one of the most important factors in our success.

Thanks to the better means of observation thus secured—*i.e.*, thanks to our airmen—the power of our artillery has been nearly, if not quite, trebled. Secure in this superiority, we next set about the approach, by siege methods, to points from which we can at any time sever the enemy's lateral railways by which reinforcements can be rushed from one point of the frontier to the other, and since the possession of this power of lateral transmission is vital for the Germans, they have been *compelled to attack us over and over again at points of our own choice* to prevent its destruction. In so doing they have been uniformly losing men in the proportion of not less than three to one, and this proportion, it is clear from all the latest French reports, has been steadily growing. Thus recently the French have been killing them off at the rate of five to one.

On the East the Russians have had to adopt another method, but one which is equally efficacious. Having hundreds of miles of territory behind them, the temporary loss of which matters nothing to the cause as a whole, they have met the furious German offensive precisely as the Boers dealt with our advances in South Africa. They have stood to draw the German attacks, and then, since the possession of a particular trench was of no value to them one way or the other, they have withdrawn, exactly as the Boers used to retire before us. Thus the Russians have gradually lengthened the lines of the German communications, until these are becoming suitable targets for raids by their mounted infantry, which, when the time comes, they will use as De Wet and Botha used their commandos on the veldt.

Had we endeavoured to emulate our antagonists by trying to "hack our way through" in their brutal and blundering fashion, we might very well have taken three years over the task, or more; but analysing the problem skilfully and concentrating on the decisive factor, I think I may safely prophesy on a speedy decision in our favour.

LIFE IN THE DARDANELLES.

From an Officer's Letter.

To the Editor of LAND AND WATER.

SIR,—I send you the following account of my experiences in the Dardanelles. I am writing this stretched out full length, watching a battle line some six miles long. I am not in the fight to-day, but an occasional shell comes along just as a reminder. Before I describe this wonderfully interesting sight I must tell you something of our landing in Gallipoli. We gained a footing at four points on the toe of the peninsula (simultaneously), each spot a little stretch of sandy beach some one mile apart.

The landing was most bloody work. No troops in the world save our own would have faced the storm of shot and shell poured on them from row upon row of Turkish trenches. The guns of our Fleet smashed up all the forts, but had little or no effect on the men in the trenches. Little damage was done, so far as I could see, to any Turkish trench by the ships' fire. Our men had to do all the trench clearing with rifle and bayonet, and they did it in fine style, too. But the cost was great. Personally I had several narrow squeaks while supervising the disembarkation of my men, as shells dropped all round, and at my feet almost, but by a miracle neither I nor anybody else was touched. I could give you some interesting personal experiences, but as I am now trying to give you a general idea of the whole landing, I will leave personal things out.

To resume my story, the landing on the other three points, W and X and Y Beaches, was carried out in the face of fierce opposition by the Inniskillings, K.O.S.B.'s, Border, and Worcester Regiments. For the first two days a steady advance was made, and we held the peninsula right across from the Dardanelles to the Ægean Sea, and in those two days won some three miles inland (up the peninsula). All the way we had to face trench after trench, and our fellows did extremely well in progressing so far. The geography of the country is very interesting. Except at the landing-places the cliffs rise abruptly from the shore to a height of 100 to 150 feet, and from the cliffs the

country rises gently for about half a mile. Then you look down as it were from the rim of a saucer upon a beautiful green valley full of olive trees, vineyards, and young green corn. There are many wells like those we see in pictures in illustrated Bibles, but there were no Rachels drawing water—all the people have fled before us, not a man, woman, or child is to be seen. Well, imagine, if you can, a great tree-dotted saucer some five miles in diameter, rising gradually on the far side from where we landed to a considerable height, some 600 feet or thereabouts. It makes a grand stage for a fight, and we can watch every move of man and gun.

The French are away on the right, and I watch them mass in hollows and ravines, then advance under the pounding shelter of the 75 guns. The latter are served magnificently. The French infantry, as they deploy, find the ground to their immediate front swept yard by yard by the guns fired by their comrades a mile or two in rear of them. It is a stirring sight to watch the officers dash out and lead the men into a storm of fire. Then the Turks run like hares. Now the French are retiring over the hill, pelted by the Turks. The latter are in great force apparently, and too strong for the French. The latter are again reformed in the shelter of a cliff, and now they advance again over the hill. Fortune go with them!

I must now look at the British. The 88th Brigade is in touch with the French left and is near the right centre of the saucer. The 87th and 86th Brigades of the 29th Division extends across the rest of the saucer to the Ægean Sea. All face the hill I have already mentioned, called "Achi Baba" (good father), and march towards it in the face of fierce opposition. The Turks are entrenched on Achi Baba and on the slope up to it, and we barely hold half of the saucer. The rattle of the rifles makes a continuous roll and crackle. The Ghurkas are attacking the village now. I hope they will win it, but it is growing dusk and the shells burst all round the village. It is now on fire and looks well as a picture. It will be my guide to-night, as I have to go out to the front trenches with ammunition after dark.

£4 10s. 0/0 WAR LOAN, 1925-1945.

ISSUE OF STOCK OR BONDS,

BEARING INTEREST AT 4% PER ANNUM, PAYABLE HALF-YEARLY ON THE 1st JUNE AND THE 1st DECEMBER.

PRICE OF ISSUE FIXED BY H.M. TREASURY AT £100 PER CENT
A FULL HALF-YEAR'S DIVIDEND WILL BE PAID ON THE 1st DECEMBER, 1915.

The Stock is an investment authorised by "The Trustee Act, 1893," and Trustees may invest therein notwithstanding that the price may at the time of investment exceed the redemption value of £100 per cent.

Applications, which must be accompanied by a deposit of £5 per cent., will be received at the Bank of England, Threadneedle Street, London, E.C., and may be forwarded either direct, or through the medium of any Banker or Stockbroker in the United Kingdom. Applications must be for even hundreds of pounds.

Arrangements are being made for the receipt of applications for smaller amounts than £100 through the Post Office.

Further payments will be required as follows:—

£10 per cent. on Tuesday, the 20th July.

£15 per cent. on Tuesday, the 3rd August.

£15 per cent. on Tuesday, the 17th August.

£15 per cent. on Tuesday, the 31st August.

£10 per cent. on Tuesday, the 14th September.

£10 per cent. on Tuesday, the 28th September.

£10 per cent. on Tuesday, the 12th October.

£10 per cent. on Tuesday, the 26th October.

THE GOVERNOR AND COMPANY OF THE BANK OF ENGLAND are authorised to receive applications for this Loan, which will take the form either of Inscribed Stock, or Bonds to Bearer, at the option of the Subscribers.

If not previously redeemed the Loan will be repaid at par on the 1st December, 1925, on giving three calendar months' notice in the London Gazette. Both right to redeem the Loan at par at any time on, or after, the 1st December, 1925, and the instalments previously paid will be liable to forfeiture.

The books of the Loan will be kept at the Bank of England and at the Bank of Ireland. Dividends will be paid half-yearly on the 1st of June and 1st December. Dividends on Stock will be paid by Warrant which will be sent by post. Dividends on Bonds will be paid by Coupon.

Inscribed Stock will be convertible into Bonds to Bearer at any time without payment of any fee; and Bonds to Bearer will be exchangeable for Inscribed Stock on payment of a fee of one shilling per Bond.

The instalments may be paid in full on or after the 20th July, 1915, under discount at the rate of 4% per cent. per annum. In case of default in the payment of any instalment by its proper date, the deposit and the instalments previously paid will be liable to forfeiture.

Scrip Certificates to Bearer, with Coupon attached for the dividend payable on the 1st December, 1915, will be issued in exchange for the provisional receipts. As soon as these Scrip Certificates have been paid in full they can be inscribed (i.e. can be converted into Stock); or, they can be exchanged for Bonds to Bearer (as soon as these can be prepared) in denominations of £100, £200, £500, £1,000, £5,000, and £10,000. Inscribed Stock will be transferable in any sums which are multiples of a penny.

CONVERSION OF

£3 10s. per Cent. War Loan, 1925-1928.

£2 10s. per Cent. Consols.

Holders of £4 10s. per Cent. War Loan, 1915-1945, will have the additional right, in respect of each £100 Stock (or Bonds) held by them, and fully-paid in cash, to exercise one or other of the four following options of conversion, provided application for conversion is made not later than the 30th October, 1915.

OPTION 1. CONVERSION OF £3 10s. PER CENT. WAR LOAN, 1925-1928.

To exchange Stock (or Bonds) of £3 10s. per Cent. War Loan, 1925-1928, to an amount not exceeding £100 nominal, for fully-paid Stock (or Bonds) of £4 10s. per cent. War Loan, 1925-1945, at the rate of £100 of the former, with a cash payment of £5 per cent. thereon, for £100 of the latter.

Persons who exercise this option will receive the dividend of £1 10s. 11d. per cent. payable on the 1st September, 1915, in respect of the £3 10s. per cent. War Loan, 1925-1928, surrendered, and a full half-year's dividend of £2 5s. per cent., payable on the 1st December, 1915, in respect of the £4 10s. per cent. War Loan, 1925-1945, issued in lieu thereof.

OPTION 2. CONVERSION OF £2 10s. PER CENT. CONSOLS.

To exchange Stock (or Stock Certificates) of £2 10s. per cent. Consols, to an amount not exceeding £75 nominal, for fully-paid Stock (or Bonds) of £4 10s. per cent. War Loan, 1925-1945, at the rate of £75 of the former for £50 of the latter.

Persons who exercise this option will receive the usual quarter's dividend of 12s. 6d. per cent., payable on the 5th October, 1915, in respect of the £2 10s. per cent. Consols surrendered, and a full half-year's dividend of £2 5s. per cent., payable on the 1st December, 1915, in respect of the £4 10s. per cent. War Loan, 1925-1945, issued in lieu thereof.

In the event of future issues (other than issues made abroad or issues of Exchequer Bonds, Treasury Bills, or similar short-dated Securities) being made by His Majesty's Government, for the purpose of carrying on the War, Stock and Bonds of this issue will be accepted at par, plus accrued interest, as the equivalent of cash for the purpose of subscriptions, to such issues.

A commission of one-eighth per cent. will be allowed to Bankers, Brokers, and Financial Houses on allotments made in respect of cash applications for this issue bearing their Stamp; but no commission will be allowed in respect of applications for conversion.

Application Forms for Cash Subscriptions may be obtained at the Bank of England and the Bank of Ireland; at any Bank or Money Order Office in the United Kingdom; of Messrs. Mullens, Marshall & Co., 13, George Street, Mansion House, E.C.; and of the principal Stockbrokers.

Application Forms for Conversion will be forwarded with each Letter of Allotment.

The List of Applications will be closed on or before Saturday, the 10th July, 1915.

BANK OF ENGLAND, LONDON, 21ST JUNE, 1915.

£2 15s. per Cent. Annuities.

£2 10s. per Cent. Annuities.

holders by them, and provided application for conversion is made not later than the

OPTION 3. CONVERSION OF £2 15s. PER CENT. ANNUITIES.

To exchange Stock (or Stock Certificates) of £2 15s. per cent. Annuities, to an amount not exceeding £67 nominal, for fully-paid Stock (or Bonds) of £4 10s. per cent. War Loan, 1925-1945, at the rate of £67 of the former for £50 of the latter.

Persons who exercise this option will receive the usual quarter's dividend of 13s. 9d. per cent., payable on the 5th October, 1915, in respect of the £2 15s. per cent. Annuities surrendered, and a full half-year's dividend of £2 5s. per cent., payable on the 1st December, 1915, in respect of the £4 10s. per cent. War Loan, 1925-1945, issued in lieu thereof.

OPTION 4. CONVERSION OF £2 10s. PER CENT. ANNUITIES.

To exchange Stock (or Stock Certificates) of £2 10s. per cent. Annuities, to an amount not exceeding £78 nominal, for fully-paid Stock (or Bonds) of £4 10s. per cent. War Loan, 1925-1945, at the rate of £78 of the former for £50 of the latter.

Persons who exercise this option will receive the usual quarter's dividend of 12s. 6d. per cent., payable on the 5th October, 1915, in respect of the £2 10s. per cent. Annuities surrendered, and a full half-year's dividend of £2 5s. per cent., payable on the 1st December, 1915, in respect of the £4 10s. per cent. War Loan, 1925-1945, issued in lieu thereof.

Persons who exercise this option will receive the usual quarter's dividend of 12s. 6d. per cent., payable on the 5th October, 1915, in respect of the £2 10s. per cent. Annuities surrendered, and a full half-year's dividend of £2 5s. per cent., payable on the 1st December, 1915, in respect of the £4 10s. per cent. War Loan, 1925-1945, issued in lieu thereof.

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A copy of this Prospectus has been filed with the Registrar of Joint Stock Companies.

The Subscription List will open To-day, Thursday, the 24th day of June, and will close on or before the following Monday.

THE BLERIOT MANUFACTURING AIRCRAFT COMPANY, LIMITED.

(Incorporated under the Companies Acts, 1903 to 1913.)

Manufacturers of Aeroplanes, Sea-planes, War-planes, Biplanes and Monoplanes.

CAPITAL: £200,000, divided into 180,000 Ten per cent. Cumulative and Participating Ordinary Shares of £1 each, and £20,000 Deferred Ordinary Shares of 1s. each (400,000).

The Union of London and Smiths Bank, Limited, Head Office, 2, Princes Street, London, E.C., are authorised, as Bankers to the Company, to receive Applications for the £100,000 now offered for Subscription at Par, as follows:

95,000 10 per cent. Cumulative and Participating Ordinary Shares of £1 each, payable as follows, viz., 2s. 6d. per share on application, 7s. 6d. per share on allotment, and the balance as and when required.

£5,000 in Deferred Ordinary Shares of one shilling each, payable as follows, viz.: 3d. per Share on application and the balance on allotment.

The 10 per cent. Cumulative and Participating Ordinary Shares are entitled out of the available profits made in any year to a Cumulative Preferential Dividend at the rate of ten per cent. per annum (10%) on the capital paid up thereon, and also to thirty per cent. (30%) of the further profits in any year available for distribution among the members, the remainder belonging to the holders of the Deferred Ordinary Shares.

Applicants for the 10 per cent. Cumulative and Participating Ordinary Shares are entitled to apply for Fifty 1s. Deferred Ordinary Shares (part of the above-mentioned £5,000 Deferred Ordinary Shares), in respect of each 100 10 per cent. Cumulative and Participating Ordinary £1 Shares allotted to them.

DIRECTORS.

LIEUT. HIS GRACE THE DUKE OF MANCHESTER, P.C., Kimbolton Castle, Huntingdonshire, *President, National Aero Defence League.*

WILLIAM A. CASSON, Barrister-at-Law (*Late Local Government Board Auditor*), Clun House, Surrey Street, Strand, London.

ADMIRAL THE HON. SIR EDMUND R. FREMANTLE, G.C.B., C.M.G., 44, Lower Sloane Street, London, S.W.

SIR ALGERNON GUINNESS, BART., "Aranmor," Kingston Hill, Surrey.

J. H. SWINBURN, F.C.I.S., 49, Old Bond Street, London, W., *Director, Army & Navy Contract Corporation, Ltd.*

Bankers.

THE UNION OF LONDON & SMITHS BANK, LIMITED, 66, Charing Cross, London, S.W., Head Office, 2, Princes Street, London, E.C., and Branches.

Solicitors.

MESSRS. J. J. EDWARDS & CO., 28, Sackville Street, London, W.

Auditors.

MESSRS. TURQUAND YOUNGS & CO., Chartered Accountants, 41, Coleman Street, London, E.C.

Accountants.

MESSRS. H. HACKETT & CO., Chartered Accountants, 44, Bedford Row, London, W.C.

Secretary and Offices (pro tem.).

G. T. HUNT, Clun House, Surrey Street, Strand, London, W.C.

ABRIDGED PROSPECTUS.

The object of this Company is to provide a much larger number of Aeroplanes to the order of His Majesty's Government for the Flying Services of the Admiralty and the War Office by acquiring and extending the well-known Aircraft Manufacturing business in this country of M. Bleriot (a Contractor to the British Government).

The Company will have the right to manufacture and sell Bleriot Aeroplanes in the United Kingdom of Great Britain and Ireland and the British Dominions, Colonies, and Possessions, whilst M. Bleriot is debarred from competing with this Company in the United Kingdom or in the British Dominions, Colonies, or Possessions.

The recent victories over Zeppelins show that the security of British homes is best preserved by largely increasing the number of our Aircraft. This is the supreme need of the hour.

The War Office is now taking the entire output, and it is intended largely to increase this output by means of extensions and new works, designed for the production of all types of Seaplanes, Warplanes, Biplanes, and Monoplanes.

The field open for the operations of the Company is practically unlimited, both during War and Peace. M. Bleriot's figures prove its rapidly increasing prosperity independently of the War. The influence of Aircraft on the War and the advantages gained by the side possessing superiority in Aircraft is being daily demonstrated, as Field-Marshal Sir John French in a Despatch writes:—

"I feel sure that no effort should be spared to increase their numbers and perfect their equipment and efficiency."—Quoted in *Land and Water* of the 3rd April, 1915.

GOVERNMENT DEMAND.

"We Want More Aeroplanes. The Germans have many more than we have. One British Aviator goes as far as two or three Germans, But We Want More Machines, and the more you can turn out the better it will be for our brave fellows in France."—Rt. Hon. D. Lloyd George. See *Daily Mail*, June 14th, 1915.

Everything points to immense forward strides for the Aircraft Industry in 1915, and the present is an opportune moment for extending and developing this business in order to manufacture machines as speedily as possible. The industry is now on a permanent basis, giving employment to thousands of workers.

The Company has already received proposals and offers of Aeronautical constructional work for other Continental and American types of Aircraft, of which advantage will be taken when the new works are complete.

The famous business of M. Bleriot is probably the oldest established in the aviation industry. To his well-known inventions must now be added his latest improved biplane arranged with two engines, so that the risk of stoppage in flight is guarded against, one engine continuing to operate should the other stop.

Whilst the business of the Company, from having been one of the pioneers of aviation, is now firmly established, the aviation industry may, nevertheless, be said to be yet in its infancy.

By reason of the experience that has been obtained and the capital to be employed, this Company should be in a position to take advantage of any improvements which the future may show. It is well known that vast improvements have already been effected since M. Bleriot made his—then—great flight, a little over five years ago, starting at Calais and alighting on the Cliffs at Dover. The news that "a man had actually flown from France to England" was carried all over the world. Orders for "Bleriot's" began to pour in, and the sales in the first year (as shown in M. Bleriot's letter below) amounted in value to no less a sum than £114,663. These have steadily increased, and M. Bleriot now finds himself inundated with orders for aeroplanes, and aircraft of various kinds.

The following letter has been received from M. Bleriot:—

"Gentlemen,

"In securing the formation of an English Company under the title of the Bleriot Manufacturing Aircraft Company, Limited, I wish to provide for the extension of the Works I established in England in order that advantage may be taken of the opportunities which are being offered to me by the British Government to manufacture large numbers of Aeroplanes.

"I am desirous of assisting in every way the successful formation of this Company for carrying out the extensions and developments which are now so urgently needed.

"I understand it would be more in accordance with the practice of the British Admiralty and the War Office to give their orders to an English Company, than to a Branch of my French business.
"The following figures I am pleased to give you as showing the gradual increase and success of my French business since my flight from Calais to Dover.

SALES OF BLERIOT AEROPLANES.

1910	£114,668
1911	£134,215
1912	£141,904
1913	£188,072
1914	£322,920

NOTE.—These figures are prior to and quite independent of the War.

"The last period covers 18 months ending January 31st of the present year, 1915.
"In conclusion, I have pleasure in saying that in concurring in placing my practical knowledge and expert experience at your disposal, I do so with the utmost confidence in the future brilliant success of your Company

"Yours faithfully,
(Signed) "L. BLERIOT."

Some of the above-mentioned figures comprise sales of machines, parts of machines, and accessories delivered to the English works. The figures have been verified by Messrs. Marwick, Mitchell, Peat & Co., Chartered Accountants, and are calculated at the rate of 25 frs. to the £1. Messrs. H. Hackett and Co., Chartered Accountants, of 44, Bedford Row, London, W.C., certify as follows:—

"To the Directors of the Bleriot Manufacturing Aircraft Company, Ltd., London.
"Dear Sirs,

"May 28th, 1915.

"In accordance with your instructions, we have examined the Books of Accounts of the BLERIOT business carried on in England, and find that same have been regularly kept, and show clearly the conduct and growth of the business since its foundation, and we have carefully analysed all capital outlay.

"The business, which was established in England in 1910 at the commencement of the aviation industry, increased to such an extent, and the demand became so great for Bleriot Aeroplanes, that, in order to save packing, freight, carriage and risk, and the delay consequent on transmission of goods from France, works were established and equipped in this country in 1913, and the business of manufacturing was in full working order in March of last year.

"We certify that the net profits for the period of 12 months ending 31st March, 1915, amounted to £39,393 17s. 10d.

"Yours faithfully,
(Signed) "H. HACKETT AND CO.,
"Chartered Accountants."

The Directors are of the opinion that, having regard to the working capital to be introduced from this issue, allowing for extension of works and laying down of additional machinery, the turnover will be materially increased without adding appreciably to the administration expenses. The future profits therefore should be largely in excess of those certified, but the Directors are content to base their estimates on the actual profits made during the 12 months ending 31st March, 1915.

The returns to shareholders would therefore be

Certified profits	£39,393 0 0
Less provision for Directors' Fees	£1,500 0 0

£37,893 0 0

One quarter of such profits payable to M. Bleriot, so long as he is the registered proprietor of shares of the total nominal value of £40,000 in the capital of the Company	£9,473 0 0
Cumulative dividend of 10% on say 95,000 cumulative and participating ordinary shares	£9,500 0 0
Participating dividend on such Shares	£5,676 0 0
Dividend on the Deferred Ordinary Shares	£13,244 0 0

EQUALS A RETURN OF OVER 15½%

£37,893 0 0

The above figures show to every shareholder who applies for the proportion of Deferred Ordinary Shares to which he is entitled, a return of over fifteen and one-half per cent. (15½%) on the £1 Shares, and over sixty-five per cent. on the Deferred Ordinary Shares.

These substantial profits earned by the English business, viz.: £39,393 17 10 for the year ending 31st March, 1915, without the proposed extensions show full and ample security to the Shareholders for payment of the Priority dividend; such fixed dividend being already covered nearly three times over by the present earnings.

Bleriot aeroplanes have established a great reputation. It is claimed by this Company that the latest improved Bleriot biplane will have no superior, and with the excellence of the British and Allied flying men extraordinary results are confidently expected.

Agreeably with the terms of the sanction given by the Treasury to this Capital Issue, application will be made after the distribution of the share certificates for the permission of the Committee of the London Stock Exchange for dealings in the shares now offered for subscription.

The Treasury has been consulted under the Notification of the 18th January, 1915, and raises no objection to this Issue. It must be distinctly understood that in considering whether they have or have not any objections to New Issues the Treasury does not take any responsibility for the financial soundness of any Schemes, or for the correctness of any of the statements made or opinions expressed with regard to them.

ACHIEVEMENTS.

The Royal Aero Club for the United Kingdom report states that Bleriot machines have made records for the highest altitude (namely, 14,920ft. last year) and speed in Great Britain. In the Paris to Rome flight Bleriot machines finished first and second. In the circuit of Great Britain of 1,010 miles a Bleriot machine gained the *Daily Mail* prize, and in the Petrograd to Moscow flight a Bleriot machine finished first.

M. Chereau, of the English Bleriot Works, states:—

The first man to cross the English Channel was M. Louis Bleriot, on a BLERIOT, fitted with a 25 H.P. Engine.

The second crossing of the Channel was made by Count de Lesseps, on a BLERIOT, 50 H.P. Engine.

The first man to cross the English Channel with a passenger was Mr. Moleant, also on a BLERIOT.

The first Non-Stop Journey from London to Paris was made on a BLERIOT by Mr. Prier.

The first crossing of the Irish Channel was made by Mr. Corbett Wilson, on a BLERIOT.

The second crossing was also made by Mr. Corbett Wilson on a BLERIOT.

The first crossing of the Alps was also made on a BLERIOT.

The first crossing of the North Sea from England to Norway was made by Lieut. Gran on a BLERIOT.

The first Lady Pilot to cross the Channel was Miss Quimby, also on a BLERIOT.

And a third crossing of the Irish Channel was made by Mr. Mellin, also on a BLERIOT

The Record Flight from London to Paris stands unbeaten in the name of Mr. H. Salmet, on a BLERIOT.

The Circuit of Great Britain for the £10,000 *Daily Mail* prize was also won on a BLERIOT by M. Beaumont, who was afterwards received by His Majesty, King George, at Buckingham Palace.

The Circuit of Europe was also won by M. Beaumont on a BLERIOT, and he also won the Great Race from London to Turin.

The BLERIOT was also the first machine to demonstrate the possibilities of "Looping the Loop" and "Upside Down Flying."

The great Non-Stop Flight from Dover to the Zeppelin Sheds at Cologne was also achieved by M. Hamel with a passenger, on a BLERIOT.

All the BLERIOTS and BLERIOT built machines, both Biplanes and Monoplanes, are being taken by the Allies and used in the War in increasing numbers. They are credited with many wonderful achievements, as seen in the *Daily Papers*.

This Application Form may be used for Ten Per Cent. Cumulative and Participating Ordinary Shares of £1 each.

THE BLERIOT MANUFACTURING AIRCRAFT CO., LTD.

(Incorporated under the Companies Acts, 1905 and 1913).

Capital - - - £200,000.

Divided into 180,000 Ten Per Cent. Cumulative & Participating Ordinary Shares of £1 each, and £20,000 in Deferred Ordinary Shares of 1/- each

ISSUE of 95,000 10% CUMULATIVE and PARTICIPATING ORDINARY SHARES OF £1 EACH.

To the Directors of THE BLERIOT MANUFACTURING AIRCRAFT COMPANY, LIMITED.

GENTLEMEN, Having paid to your Bankers the sum of £..... being a deposit of 2/6 per Share on 10% Cumulative and Participating Ordinary Shares of £1 each in the above-named Company, I request you to allot me that number of Shares on the terms of the Prospectus issued by you, dated 21st June, 1915, and of the Memorandum and Articles of Association of the Company, and I hereby agree to accept the same, or any smaller number that may be allotted to me, and to pay the balance of 17/6 per Share as provided by the said Prospectus, and I authorise you to place my name on the Register of Members in respect of the Shares so allotted.

(Name (in full)
(Mr., Mrs., or Miss)
Please Write Distinctly. Address
Description
Usual Signature

Date 1915.

Full Prospectuses and Forms of Application can be obtained at the Offices of the Company or from the Bankers or Solicitors.

Dated 21st June 1915.

TALES OF THE UNTAMED.

MARGOT (continued).

Adapted from the French by Douglas English.

BUT, as the enveloping hand squeezed past the opening, the grip of it relaxed. Her wings slipped clear; she made full use of them, dug beak deep down into the palm, and, with one supreme effort, wriggled free, and winged towards the sky.

A stunning crashing jar cut short her flight. With wounded breast, with splintered beak, she fell, wings spread across the sink.

The crockery danced and rattled, glasses spun round and shattered on the floor—and she was once more prisoner. The hand had pounced on her afresh and gripped her like a vice.

Windows were things undreamt of in her world. The outer sky had beckoned her. An unseen barrier, permeable by sight, was past her understanding.

The Man was irritated. He gripped as though to strangle her, and Margot strove against him.

She writhed and twisted in his hands, she sought to use her beak again.

Her puny force was chilled and quenched by fear—fear of the scissors brandished by the Woman.

They pointed their fierce blades at her. They opened out and closed again, their edges grinning, rasping.

Would this cold, pitiless beak of steel be plunged into her flesh?

She was flung backwards, pinned by hands confederate; and scream of agony proclaimed the wrenching of her tail-quills from their sockets.

So steering power was torn from her.

The wings were crippled next. Nipped right and left they numbed in pain, and right and left, clicked scissor-snip, and pit-a-pat of feathers, lightly falling.

A stifled gurgle burst from her dumb lungs. She glucked like blooded fowl. She waited for the finishing stroke, the plunging of the steel into her throat; the last, the supreme torture.

But suddenly the hands were lifted from her. She sat dumb on the table's edge, her every nerve ajar with pain, her every muscle smarting. And round her laughter spent itself, and mockery, and railling.

Man and Man's friends had grouped to pay her homage.

The sky at least was there, the beckoning sky.

She spread her wings and leapt towards the window. The leap was limit of her course.

Like stone she fell and raised a mocking laugh again. Yet she did not despair.

She flapped her crippled stumps of wings, and time and time again essayed the lilting glide which leads to flight.

The grace of it was gone. She toppled, stumbled pitifully. Feet, body, neck were out of gear, and mocking laughter waited on her always.

She understood at last; she knew that her whole world was changed, that an abyss impassable had sundered her from freedom; that flight was now denied her, that she was prisoner for life.

She shrunk behind the cage—its door was closed—she circled it, she crouched against the side of it. She ducked her head beneath her crippled wing, and till that day had passed she neither ate, nor drank, nor moved.

Man, Woman, Child took curious note of her, like visitors round a sick-bed. They whispered, argued, threatened. She paid no heed. Despair had laid a hand on her, a chilly, numbing hand. A momentary rustle of her feathers, a momentary flicker of her eyes, were the sole signs of life in her maimed body.

But she was young. Her thoughts were fugitive. They skimmed her brain and left small trace behind them. She woke from sleep to find her troubles softened.

The pain was gone, and, in its place, two mastering instincts held her, the need for food, the need for sheltered roosting-place.

She ate the scraps and morsels that lay near her; she drank fresh water from her pannikin, and, with her strength renewed, commenced her search.

From bench to bench, from room to room she tripped.

Her innate curiosity now ordered all her goings.

She questioned every stick and stone she met. She pried in corners, sounded holes. With head aslant she eyed each cleft and crevice; took measure of the chinks between the

boards; appraised with care meticulous, the chance-found treasures of the littered floors.

Were these close scrutinies casual or ordered by some mystic sense of profit?

From time to time, no doubt, she chanced on food, but glistening things allured her most. She worshipped these as idols, caressed them, lingered by them, in morbid, spell-bound ecstasy.

Most fuds she quickly tired of. She prized them for their novelty, their opportune presentment, their momentary use.

She chose the serving-counter for headquarters. Beneath it dropped tit-bits of food; behind it was the dresser. And this was lit with gleam of polished metal, knife-blades with steely sheen on them, dish-covers, spoons, and forks.

She quickly learnt Man's feeding times. She mustered her best manners then, and with coquettish beaks and nods, sought and compelled attention.

She quickly learnt Man's call-note—the syllables of her name—and linked it in her mind with food.

She fixed its distance instantly, and with giant hops and fluttery wings made bee-line to its source.

And she had other company than Man: the dog whose presence she took little heed of; the cat whom she distrusted. The cat's advances frightened her. She feared the twitching of his ears, his lashing tail, his sleepy-stretching claws, the down-drawn corners of his whiskered muzzle. Yet there was truce between them, truce after strenuous contest, where each had learnt the other's qualities—and weapons.

The days trailed by monotonous.

Under two deadening influences, the frousty, heated atmosphere, the incessant glut of food, her senses dulled.

The outer world had almost passed from her, though every dawn she flapped her stumps of wings, as though some sleeping instinct woke in her and called her to the sky.

She learnt the quiet corners of the kitchen—behind the stove, beneath the baking-range.

She knew safe spots from which to scold the cat, or tease the dog without fear of reprisal. The latter sport was friendly. The dog had smelt her dubiously at first; had thrust a curious muzzle at her plumage, and, by some mystic test, been satisfied.

The strange wild captive thing was of the household. It was uneatable. It could not harm him. Then why not let it live? A game-bird might have tempted him (for want of hare or rabbit), but blackbirds, magpies, jackdaws, crows, were no fit food for dog of quality.

So, when from stress of boredom or excitement, Margot was stirred to mischief, she crept behind the dog and tweaked his tail. He swung a drowsy head at her, and with round, serious eyes and upcurled lip, growled disapproval.

As his head turned she nipped again, and so the game went on.

He never lost his temper. He bore her teasing gladly, like the children's.

But it was different with the cat. The cat sneaked food-scrap which were hers by right, and, scorning her indignant outcry, ate them.

Strangers she still was nervous of. She feared their hands, feared handling altogether; for, every week at first, then every fortnight, the ordeal of the scissors was renewed.

The menace of their crunching blades drove her distraught to cover.

She dived beneath the furniture, crouched in dark holes and corners. She even squeezed through wire-work of a mattress, which meant unmaking of the bed and littering of the bedroom.

And then she fooled the clutching hands, and slipped downstairs, and for full fifteen minutes mocked pursuit.

At length, worn out, she let the Girl lay hands on her.

The Girl had shown her kindness, but piteous upturned eyes were unavailing. The Girl betrayed her to the Man.

Once more she had to face the pain, the indignity of clipping.

Winter, disputing every inch of ground, at last retreated beaten. The sun burst through the sullen clouds and flung his lusty beams about the house.

(To be continued.)



For Writing Home

The small size Onoto Pen is specially suitable for use on active service. It fills itself rapidly without the need of a glass filler, and can be carried anywhere in any pocket because when closed it never leaks. Besides, Onoto Pens are the only standard 10/6 Fountain Pens all British made by a British Company with British Capital and Labour.

THOMAS DE LA RUE & CO., LTD., LONDON.

Onoto Pen

Self-filling
Safety fountain



SECURITY - £6,107,594.

FIRE.

CONSEQUENTIAL LOSS.

ACCIDENT.

BURGLARY. MOTOR CARS. DOMESTIC SERVANTS.

MARINE.

Head Offices: { 45 DALE STREET, LIVERPOOL.
155 LEADENHALL STREET, E.C.

By Special Appointment

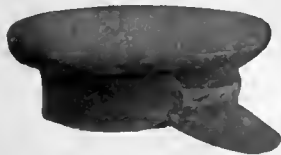


To His Majesty The King.



REGULATION SERVICE CAPS FOR OFFICERS

SOFT FITTING WITH FLEXIBLE SOFT TOP.

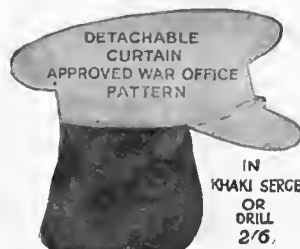


Combination of ear and back-piece



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TALES OF THE UNTAMED.

MARGOT (continued).

Adapted from the French by Douglas English.

BUT, as the enveloping hand squeezed past the opening, the grip of it relaxed. Her wings slipped clear; she made full use of them, dug beak deep down into the palm, and, with one supreme effort, wriggled free, and winged towards the sky.

A stunning crashing jar cut short her flight. With wounded breast, with splintered beak, she fell, wings spread across the sink.

The crockery danced and rattled, glasses spun round and shattered on the floor—and she was once more prisoner. The hand had pounced on her afresh and gripped her like a vice.

Windows were things undreamt of in her world. The outer sky had beckoned her. An unseen barrier, permeable by sight, was past her understanding.

The Man was irritated. He gripped as though to strangle her, and Margot strove against him.

She writhed and twisted in his hands, she sought to use her beak again.

Her puny force was chilled and quenched by fear—fear of the scissors brandished by the Woman.

They pointed their fierce blades at her. They opened out and closed again, their edges grinning, rasping.

Would this cold, pitiless beak of steel be plunged into her flesh?

She was flung backwards, pinned by hands confederate; and scream of agony proclaimed the wrenching of her tail-quills from their sockets.

So steering power was torn from her.

The wings were crippled next. Nipped right and left they numbed in pain, and right and left, clicked scissor-snip, and pit-a-pat of feathers, lightly falling.

A stifled gurgle burst from her dumb lungs. She glucked like blooded fowl. She waited for the finishing stroke, the plunging of the steel into her throat; the last, the supreme torture.

But suddenly the hands were lifted from her. She sat dumb on the table's edge, her every nerve ajar with pain, her every muscle smarting. And round her laughter spent itself, and mockery, and railing.

Man and Man's friends had grouped to pay her homage.

The sky at least was there, the beckoning sky.

She spread her wings and leapt towards the window.

The leap was limit of her course.

Like stone she fell and raised a mocking laugh again. Yet she did not despair.

She flapped her crippled stumps of wings, and time and time again essayed the lilting glide which leads to flight.

The grace of it was gone. She toppled, stumbled pitifully. Feet, body, neck were out of gear, and mocking laughter waited on her always.

She understood at last; she knew that her whole world was changed, that an abyss impassable had sundered her from freedom; that flight was now denied her, that she was prisoner for life.

She shrunk behind the cage—its door was closed—she circled it, she crouched against the side of it. She ducked her head beneath her crippled wing, and till that day had passed she neither ate, nor drank, nor moved.

Man, Woman, Child took curious note of her, like visitors round a sick-bed. They whispered, argued, threatened. She paid no heed. Despair had laid a hand on her, a chilly, numbing hand. A momentary rustle of her feathers, a momentary flicker of her eyes, were the sole signs of life in her maimed body.

But she was young. Her thoughts were fugitive. They skimmed her brain and left small trace behind them. She woke from sleep to find her troubles softened.

The pain was gone, and, in its place, two mastering instincts held her, the need for food, the need for sheltered roosting-place.

She ate the scraps and morsels that lay near her; she drank fresh water from her pannikin, and, with her strength renewed, commenced her search.

From bench to bench, from room to room she tripped.

Her innate curiosity now ordered all her goings.

She questioned every stick and stone she met. She pried in corners, sounded holes. With head aslant she eyed each cleft and crevice; took measure of the chinks between the

boards; appraised with care meticulous, the chance-found treasures of the littered floors.

Were these close scrutinies casual or ordered by some mystic sense of profit?

From time to time, no doubt, she chanced on food, but glistening things allured her most. She worshipped these as idols, caressed them, lingered by them, in morbid, spell-bound ecstasy.

Most finds she quickly tired of. She prized them for their novelty, their opportune presentment, their momentary use.

She chose the serving-counter for headquarters. Beneath it dropped tit-bits of food; behind it was the dresser. And this was lit with gleam of polished metal, knife-blades with steely sheen on them, dish-covers, spoons, and forks.

She quickly learnt Man's feeding times. She mustered her best manners then, and with coquettish beaks and nods, sought and compelled attention.

She quickly learnt Man's call-note—the syllables of her name—and linked it in her mind with food.

She fixed its distance instantly, and with giant hope and fluttery wings made bee-line to its source.

And she had other company than Man: the dog whose presence she took little heed of; the cat whom she distrusted. The cat's advances frightened her. She feared the twitching of his ears, his lashing tail, his sleepy-stretching claws, the down-drawn corners of his whiskered muzzle. Yet there was truce between them, truce after strenuous contest, where each had learnt the other's qualities—and weapons.

The days trailed by monotonous.

Under two deadening influences, the frousty, heated atmosphere, the incessant glut of food, her senses dulled.

The outer world had almost passed from her, though every dawn she flapped her stumps of wings, as though some sleeping instinct woke in her and called her to the sky.

She learnt the quiet corners of the kitchen—behind the stove, beneath the baking-range.

She knew safe spots from which to scold the cat, or tease the dog without fear of reprisal. The latter sport was friendly. The dog had smelt her dubiously at first; had thrust a curious muzzle at her plumage, and, by some mystic test, been satisfied.

The strange wild captive thing was of the household. It was uneatable. It could not harm him. Then why not let it live? A game-bird might have tempted him (for want of hare or rabbit), but blackbirds, magpies, jackdaws, crows, were no fit food for dog of quality.

So, when from stress of boredom or excitement, Margot was stirred to mischief, she crept behind the dog and tweaked his tail. He swung a drowsy head at her, and with round, serious eyes and upcurled lip, growled disapproval.

As his head turned she nipped again, and so the game went on.

He never lost his temper. He bore her teasing gladly, like the children's.

But it was different with the cat. The cat sneaked food-scrap which were hers by right, and, scorning her indignant outcry, ate them.

Strangers she still was nervous of. She feared their hands, feared handling altogether; for, every week at first, then every fortnight, the ordeal of the scissors was renewed.

The menace of their crunching blades drove her distraught to cover.

She dived beneath the furniture, crouched in dark holes and corners. She even squeezed through wire-work of a mattress, which meant unmaking of the bed and littering of the bedroom.

And then she fooled the clutching hands, and slipped downstairs, and for full fifteen minutes mocked pursuit.

At length, worn out, she let the Girl lay hands on her.

The Girl had shown her kindness, but piteous upturned eyes were unavailing. The Girl betrayed her to the Man.

Once more she had to face the pain, the indignity of clipping.

Winter, disputing every inch of ground, at last retreated beaten. The sun burst through the sullen clouds and flung his lusty beams about the house.

(To be continued.)



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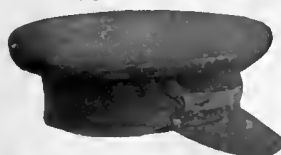


To His Majesty The King.



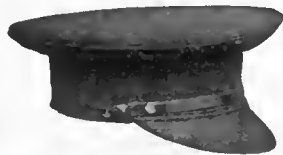
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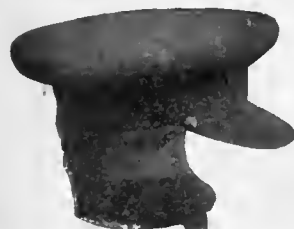


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WINGARNIS



FROM a feminine point of view there are few things more interesting than finishing touches. Speaking broadly, women may be divided into two classes—those who deal in etceteras and those who disdain them. And the latter, as a general rule, can hardly be counted amongst the decorative portion of the community. Soldiers' wives are frequently past mistresses in the art, anyhow where their habitation is concerned. Many a woman has arrived in a garrison town and been confronted with the inevitable furnished house or lodgings of hideous aspect. At first the sight is apt to appal, later on it is taken as all part of the day's work and simply as a call for immediate transformation. And here is where the finishing touch comes in. Clump of attractively coloured cushions, bowls and pots of flowers, a few readable books, and a judicious collection of photographs have converted many a room to civilization. That, and a careful weeding out of existing horrors.

This weeding out, however, essential though it is, is not the principal factor in the creation of a temporary home. It is the addition of trifles that seem inseparably mingled with the personality of certain people. There are a few gifted women who have the enviable knack of creating a home-like atmosphere anywhere. One may be very certain that they would succeed in this object in a tent in the Sahara or a hut in Labrador. It is a special faculty, just as it is the special faculty of a cheeky little midinette in Paris to buy a hat for one franc fifty, trim it scantily, or not at all, slant it on her head to the psychological angle, and at once be well-hatted. At this time numbers of women are concentrating their energies on making a home far from their usual quarters. The creation of the new army, and the turning of the civilian into the soldier, has made many a woman "follow the drum" who never dreamt of such a possibility. For the first time she has realised what being moved from pillar to post really means, and that the process, amusing though it often is, is yet an exacting one. It demands adaptability and the intelligent use of the insignificant trifle.

The Small Accessory

Where clothes are concerned, of course, accessories are an all-important matter. Just at this time, perhaps, they are more important than ever, for most people now-a-days are studying the principles of economy. It is wonderful what can be imparted to a gown by just the right waistbelt, and the latest idea in spotlessly white lawn collars. Something that is a little out of the ordinary in the way of a veil will bring a moderate hat into line once again; a clever note of colour given by a parasol, a pendant, or a corsage bouquet, deliver a toilet from insignificance.

The woman who has a keen eye to detail is bound to present an attractive appearance. She can hardly do otherwise. It is not a matter of pounds, shillings, and pence alone, as many things are in this work-a-day world, but a question of taste and discernment. There are some fortunate mortals who have a knack of imparting distinction to everything they wear. They possess uncommon things, things which have often been picked up at odd moments in unexpected places, and are unlike anything owned by anybody else. It may be a handbag of some uncommon bead or leather work, a pair of quaint original hatpins, a long neck chain of beads in some exquisite colour or modelling. It may be some other trifle of the sort, sometimes of intrinsic value, sometimes worth nothing beyond its beauty in the eye of the beholder. At any rate, there they are, and by their claim to more than

ordinary distinction, they ticket their owner with the same hall mark.

On Gardens and Gardeners

The small details in a garden also are delightful to study. The interest over a new cutting, the gain of a fresh carnation, or the latest type of rose, the continual fight against green fly and a myriad other pests, is a ceaseless entertainment. And here again individuality makes itself felt. There are some people with acres of gardens, and, even in these days of war, an army of gardeners. Yet their gardens are stereotyped, and give the beholder no particular pleasure, on the contrary, often a feeling of positive dislike. And then there are the people who manage to create a thing of beauty out of nothing. In a garden hardly larger than the palm of your hand they will have something of interest and charm, something unusual and attractive in the way of bedding-out, just the right kind of garden chairs, chairs that invite the weary visitor to sink into them with a sigh of content, and not the knobby, uncomfortable sort that greet one on many a palatial lawn. Once again it is a question of the all-important detail—minor matter though it be.

Quite one of the most successful gardeners for creating something out of nothing lived in a London flat, and her medium was a roof-garden. She had green painted boxes filled with geraniums and daisies, and what is more astonishing, some standard roses, which had unexpectedly taken it into their beautiful but obstinate heads to thrive in London. On sunny days she rigged up a green and white striped awning, and with a couple of white enamelled wicker chairs and a table to match, the garden was as comfortable and shady a spot as could be desired. It was at any rate an infinite delight to the owner and her friends, and through its means one of the hottest summers ever known to London was made tolerable.

The Things That Tell

If we are honest with ourselves, most of us will admit that it is the extra things in life we appreciate, not the mere bread and butter of every-day existence. It is dull work paying the butcher, the baker, and the candlestick maker for the bare necessities of life; the money we appreciate spending goes on far less mundane considerations than these. It goes, in fact, on the tiny extras which mean so much and yet so little, and make life worth living to a greater proportion than the severely practical party would have us believe.

Our wounded soldiers and sailors are a case in point. Any visitor to any hospital will tell us that the things the men delight in are not those falling to their lot as a regular rule, but the tiny extras that come their way. Even the most taciturn Tommy finds words of thanks for a bunch of roses, newspapers, or games. As for the jig-saw puzzle, it is a complete passport to favour, inconsiderable trifle though it is. The care of the wounded, therefore, though it certainly begins, does not end with housing, food, and nursing. These are the big things, of course, but the little things count as well, in the way they always have and always will to the end of time unless human nature fundamentally alters. So the people with stores of magazines, books, puzzles, and such like distractions cannot do better than make a big bundle of them at once, and dispatch them to the nearest military hospital. Several of these in various parts of the country would be grateful for gifts of the kind, and it is quite certain this want needs but to be known to be immediately answered. As for the inventive genius with a special facility for thinking of new games suitable for convalescents, the chance of a lifetime has arrived. For there are many claimants for his wares in every direction, and a ready-made market to his hand.

HOW URIC ACID WORKS.

GOUTY DEVELOPMENT.

GOUT is latent in every human being by means of the fact that uric acid, its primal cause, occurs naturally in every system. Thus it is that gouty suffering is the most prevalent of all maladies in this country; and why anyone escapes gout at all is because Nature, by means of the liver and kidneys, destroys and eliminates the noxious poison as soon as it is produced.

A very slight cause, however, exposure to cold or damp, a chill, an accidental blow or knock, even worry, mental distress, or a sudden shock, may result in the retention of the uric acid in the body to the detriment of the whole economy.

It impedes the circulation and contaminates the blood. The results are seen in attacks of indigestion, with the distressing attendant symptoms of flatulence, acidity, heartburn, headache, and constipation. Scattered about here and there just under the skin may be seen little hard lumps, which are simply collections of solidified uric acid.

Accompanying this early stage of gouty development a burning sensation in the skin with irritation is experienced, twinges of pain in the joints frequently occur, and there is a feeling of stiffness, pain, and tenderness in both joints and muscles.

One of the most frequently occurring forms of gout is gouty eczema, the direct result of the burrowing of uric acid into the skin. There can be no more irritating or distressing ailment than gouty eczema, and, strangely enough, it often attacks persons apparently healthy and vigorous.

Another, and perhaps the most familiar of all forms of gouty suffering, is that known as chronic or rheumatic gout, or rheumatoid arthritis, when uric acid insinuates itself between the articulations, buries itself in the crevices, and invests the cartilages and ligaments of the joints, setting up pain, enlargement, inflammation, and stiffness. Uric acid is the one common cause of all other forms of gout, whether they appear in gouty rheumatism or lumbago, sciatica or neuritis, kidney stone or gravel.

RATIONAL TREATMENT OF GOUT.

To overcome and expel uric acid naturally requires the assistance of an agent even stronger than the poison itself. Scientific research into the whole subject of uric acid solvents and eliminants, conducted for many years by an old-established firm of manufacturing chemists of the highest repute, resulted in the perfecting of Bishop's Varalettes, a remedy acknowledged by the medical profession to be the most generally powerful solvents and eliminants of uric acid known. Bishop's Varalettes are a reliable and successful remedy for gouty suffering, because their action is at once rational and scientific. When administered they are rapidly absorbed by the blood, and so are enabled to follow uric acid into its remotest hiding places. The poisonous acid is neutralized by the chemical action of Bishop's Varalettes, the cement-like masses are softened and broken down, finally dissolved, and swept right out of the body. With this removal the nervous depression, the irritation, the low condition, and the pain, stiffness, and inflammation pass away, and in their place come a sense of the most grateful relief, and a raising of the whole tone of the system.

Bishop's Varalettes are perfectly safe. No harmful ingredient enters into their composition. They do not interfere with the normal action of any organ of the body. They are a preventive as well as a remedy, and prolonged use does not lessen their effect or produce any ill results.

CHOICE OF DIET.

Discrimination is practically all that is required in this respect. No self-denial of any sort is necessary, for the number and variety of foods that the gouty may eat with impunity are sufficiently extensive to satisfy the most fastidious palate or the most exacting appetite. Confirmation of this welcome fact will be found in a booklet recently issued, which deals with the subject of gouty foods in an interesting and authoritative manner. Classified lists of foods are set forth, so that it may be seen at a glance what to eat and what to avoid. A section of this booklet is devoted to the discussion of uric acid disorders, their nature and treatment, and contains a mass of useful information of the greatest value to all who suffer from or are threatened by uric acid. A copy of the booklet will be sent post free by the sole makers of Bishop's Varalettes, Alfred Bishop, Ltd., Manufacturing Chemists (Est. 1857), 48 Spelman Street, London, N.E. Please ask for Booklet N.

Bishop's Varalettes are sold in vials at 1s., 2s., and 5s. (25 days' treatment), or may be had direct from the sole makers, as above.

BOOKS OF THE WEEK

A LITERARY REVIEW

"The Audacious War." By Clarence W. Barron. (Constable.) 4s. 6d. net.

"The World in Crucible." By Sir Gilbert Parker, M.P. (Murray.) 6s. net.

In Sir Gilbert Parker's book we see the lure of modern history attracting an author away from his more usual pursuit of fiction. Sir Gilbert has a command of popular rhetoric which enables him to say with considerable vehemence what we have all been saying about Germany. There is not very much that is new. He rightly emphasises the importance of Asia and the Near East in causing the war. From time to time his quotations are apt, as when he reminds us that Froissart "laments that it was impossible to teach the German knights the principles of true knightliness;" and when he quotes Sir Ian Hamilton on the Russo-Japanese War: "The Muscovites have not lifted so much as an egg even during the demoralisation of a defeat."

Mr. Barron's book is more interesting, and more original. He is not attempting to cover the whole ground, but is presenting a few aspects of the war as they occurred to him, an American, writing from Europe. He has been in close touch with diplomatic and government circles, and he is an expert on finance. He is entirely sympathetic with the British and the French, and states our case for the American public as vigorously as it could possibly be stated. He argues that the immediate causes of the war are "connected with commercial treaties, protective tariffs, and financial progress." "Kultur" means "German progress," commercially and financially, and it is this which German armies and armaments exist, to support. During the Russo-Japanese War Germany thrust commercial treaties upon Russia wholly unfavourable to the latter. In 1914 these treaties had nearly expired. Mr. Barron asserts that it was the policy and intention of Germany to defeat the European Powers in succession with a view to dictating tariff terms to the rest of the world, including America. He urges upon his own country, "the home of protective tariffs," that "tariffs should be neighbourly." We could wish that he had developed the financial side of his argument—with the information at his disposal he might advantageously have filled a volume. The book is well worth reading. Incidentally we light upon certain facts which British newspapers are not as a rule permitted to publish.

The English Essay and Essayists. By Hugh Walker, M.A., LL.D. (Dent.) 5s. net.

Professor Walker is perhaps a little too much inclined to think that Lamb is the only kind of essayist who is really an essayist, and the examples which he considers in this volume are practically subjected to the one test: To what extent do they conform to the model of Lamb? But literature is large, and he is compelled also, in order to bring so many other writers within his scope, to give place to essayists in a secondary sense; thus he includes all "compositions to which custom has assigned the . . . name, but which agree only in being comparatively short . . . and in being more or less incomplete." Bacon is the first author whom he treats at length; and it is worthy of note that in this and in all cases Professor Walker has discussed the *thought* of his writers, as well as their technique and historical place. Steele he prefers to Addison. To Goldsmith, as essayist, he gives the place that he deserves; to Walter Pater, Jefferies, and Savage he is less, and to Richard Middleton more, than kind. The book is thorough, and it has the merit—rare in historico-critical works—of being really interesting and appreciative.

"A Lady of Russia." By Robert Bowman. (Heinemann.) 6s.

Mr. Bowman is an Englishman who has lived long in Russia. He has not only become intimate with Russian life; he has also evidently steeped himself in Russian fiction, for we can trace the unmistakable influence in his style. It is a very simple, direct story of the tragic fate of a gifted Russian woman, interested in the welfare of the peasants and the progress of her country, whom her husband, a high official, misunderstands, and whom the authorities consign to a Siberian prison. The book is worth reading as an example of an English novel about Russian life, written under Russian influences.

